

MOTHER & CHILD

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1st Ed

Mother and Child

A. SHADI KHAN,
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1st Edition—June 1975

Dedicated to my teacher,
the late Dr. Martin, who taught
me to love and understand my
patients.

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Ferozsons, Karachi

Preface

This book is meant to acquaint young and not so young married women, in a simpler form to the knowledge of conception, pregnancy, delivery, child care and family planning.

They will find this book especially useful during pregnancy, when certain physiological changes occur in the body. These normal changes are often the cause of alarm and anxiety for both the husband and the wife. In fact the whole family takes them to be symptoms of some disease, causing the woman to feel more ill, as the psychological impact is increased.

Having learnt from this book the basic facts about conception and pregnancy, and its possible aberrations, many complications could be averted, for example, abortions, anaemia, excessive weight gain, high blood pressure, etc. It is vital to keep fit during pregnancy and after the birth of the baby. In this connection a chapter has been included on antenatal and postnatal exercises.

Besides this, husbands will find this book useful, in as much as it stresses the importance of their loving care towards their wives during pregnancy, delivery; and their responsibility towards the new-born child. Mothers and mothers to be will also find this book helpful, not only in understanding their own body alterations, but also in teaching them how to care for their babies, making them into useful members of our society.

A chapter on the importance of family planning and its methods has been included. With the present rate of inflation, in an already overcrowded and competitive world, the urgency of family planning cannot be emphasised enough. This is indeed a vast field, but for the purposes of this book, the basic and most essential principles have been incorporated. This has been done in order to educate women in up to date methods, and scientifically tested techniques; and to rid them of age-old myths, and misconceived notions on the subject.

The time and labour spent on the preparation of this work, will have been well spent, if it proves to be a useful guide for married people. It is hoped that it will help them in overcoming their psychological and physiological problems, and in leading healthy, normal lives.

A. Shadi Khan

Foreword

Dr. Shadi Khan's book, "Mother and Child" is an informative and interesting study in the field of obstetrics. I am sure that all women, and particularly young mothers, will find it an instructive and reassuring guide to maternity. Every anxiety that comes with marriage and pregnancy is explained and discussed in a forthright and constructive manner. Dr. Shadi Khan is the first Pakistani lady to write such a useful book on mother and child. The author has found just the right tone for a book of this nature. Speaking with the confidence of an expert, she gives substantial medical facts; while her charming sense of humour and anecdotal style transform the process of childbirth into a fascinating experience.

I am particularly happy to see that this book explodes many of the popular myths about child bearing. In developing societies, ignorance and old wives tales often combine to make a scape goat of women. The facts as exposed by Dr. Shadi Khan should dispel many false notions about motherhood. Male readers of the book should also find it corrective as far as fake theories are concerned. This could bring new understanding and happiness to many married couples. The progressive and informed attitude of the author ensures that many readers will find this book both useful and enlightening.

Nusrat Bhutto

Begum Nusrat Bhutto

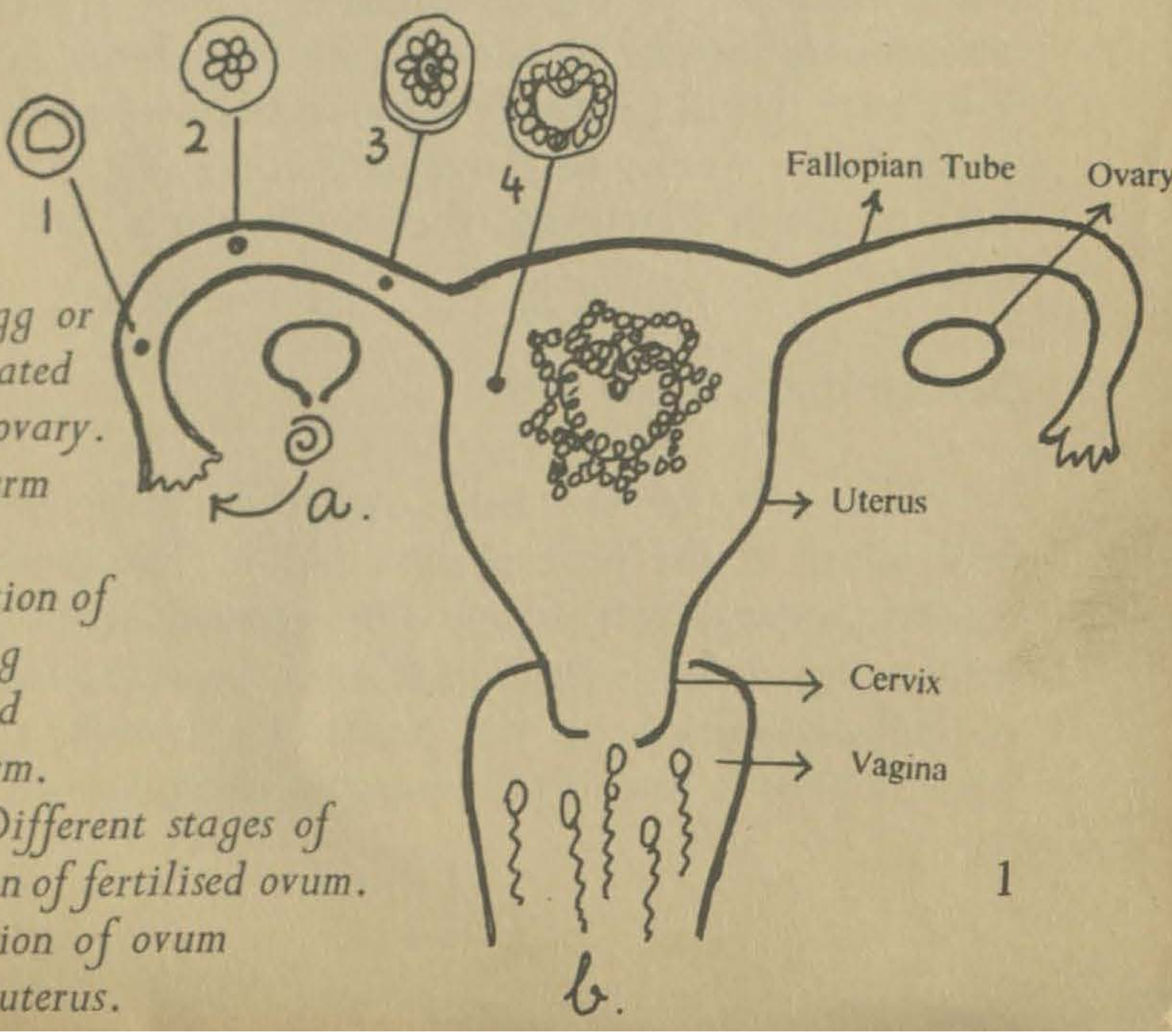
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CHAPTER I

CONCEPTION

Conception means the fertilization, or union of the female egg, the ova, with the male cell, the sperm. Their encounter is a rather dramatic process.

During each ejaculation of the semen, about sixty million sperm cells are present in one ml. (1 c.c.) A total of five to six ml. (5 to 6 c.c.) of semen is released during each intercourse. One can wonder at the extravagance of nature, as the vast number of sperms head to join one egg in the female's genital. Of these large numbers of active and motile sperms, only one will succeed to reach and penetrate the ova, to begin the miracle of life, (See diagram.)



a. *Female egg or ova liberated from the ovary.*
b. *Male sperm cell.*
1. *Fertilization of female egg (ova) and male sperm.*
2, 3 & 4. *Different stages of maturation of fertilised ovum.*
5. *Implantation of ovum into the uterus.*

The female egg or ova, is released by one of the two ovaries. One egg is liberated each month; roughly from the eleventh day of the menstrual cycle, to the sixteenth day of the cycle, commonly on the fourteenth day. During the liberation of the egg, there is a sharp rise in the body temperature to 99°F. The body temperature chart can be easily maintained and ovulation time can be ascertained each month.

The conception occurs at the time when ova is present in the outer part of the fallopian tube. The sperms, with their actively moving tails, take six to twenty-four hours to reach the egg. This long journey of the sperm, starts from the vagina, into the neck of the womb, then the womb itself and thence to the fallopian tube, where the actual fertilization occurs. The inquisitive amongst the readers, may want to know what happens to the rest of the teeming millions. Well, most of these sperms cannot complete this journey. The ones that do, but cannot penetrate the ova, all collectively help the successful one in giving energy, in the form of enzyme to the fertilized egg. The conceptus, or the fertilized egg, now travels from the tube, taking seven days to reach its new home, in the womb. From here it will gradually grow to become a baby, normally taking forty weeks to develop completely. At the end of forty weeks of nurturing, the labour starts, and the baby is delivered.

Determination of sex:

The sex of the baby, whether male or female, is determined at the time of conception. The common notion in our country is to blame the woman for bearing female babies. It is indeed unreasonable on the part of some parents to feel less happy on the birth of a female child. In my view, a baby is just as precious, no matter what sex it bears.

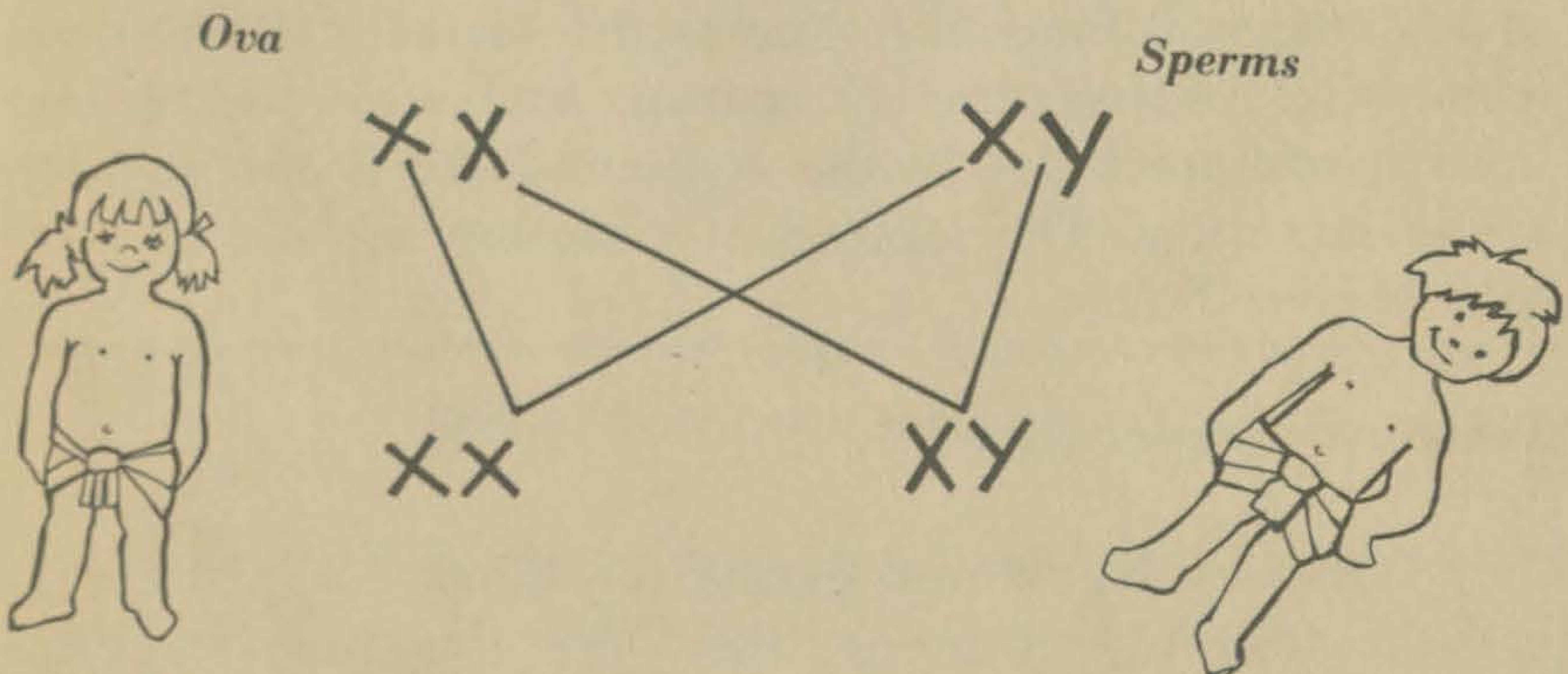
In this day and age, when equal rights for women are upcoming, the parents must welcome the child they have been blessed with.

What is the female child made of:

The egg, or the ova of the woman, carries the genetic code called X. Each egg then liberated is labelled with this mark. On the other hand, the male cell, or sperm, carries two types of genetic codes X and Y. Some sperms carry X, while others carry Y. Now if the egg, or ova is fertilized by an X sperm, the result is a female baby.

What is the male child made of:

If the egg is fertilized by a Y sperm, the result is a male baby. The following diagram will help the readers to understand the determination of the sex of the baby.



It has been estimated that fifty percent of the approximate number of sperms are Y sperms, and fifty percent are X sperms. Hence it is the husband and not the wife, on whom the sex of the baby depends.

Improving the chance of choosing the sex of your baby:

Many couples are keenly interested in having a chance of choosing the sex of their baby. It is indeed justifiable to have a family of both boys and girls.

As has already been explained, it is the husband who has the vital role in the determination of the sex of the baby. For it is he who carries the 'X' and the 'Y' sperms called the Gynosperms and Androsperms respectively. But it is the wife who also plays the vital role, so that the couple can choose the sex of their baby. This role is given below:

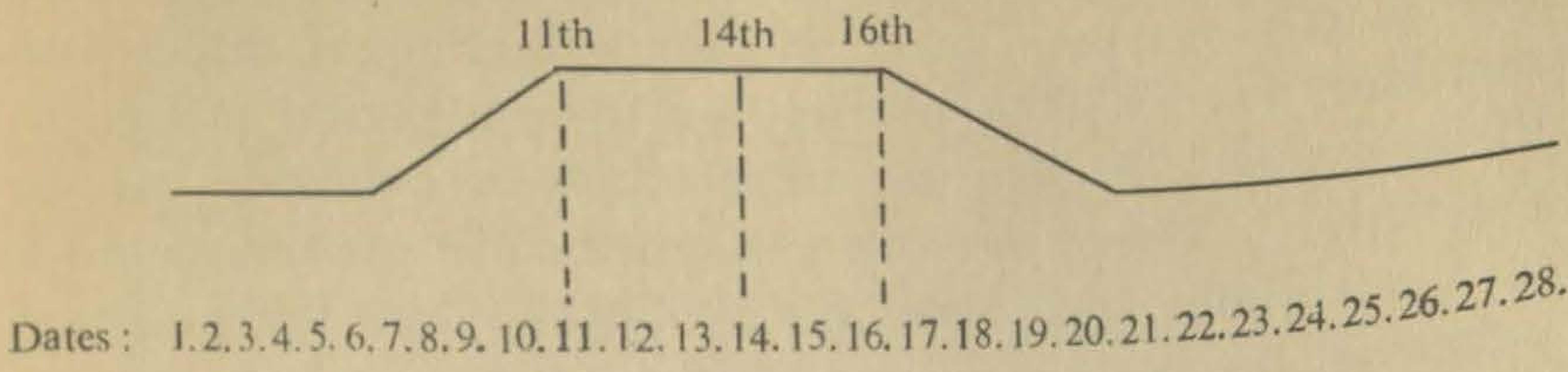
The walls of the vagina secrete two types of liquids. In the lower part of the vagina, there is an acidic secretion; and 'in the upper part, there are alkaline secretions, from the neck of the womb.

The Gynosperm (X sperm) are able to survive both in acidic and alkaline secretions in the vagina. On the other hand, the Androsperms (Y sperms) find acidic secretions hostile, and are killed in the vagina if there is an excessive acidic secretion. The method of choosing the sex of your baby is given below.

Time of intercourse:

One day before and during the liberation of the egg, (or the time of ovulation), there are abundant secretions from the vagina. These secretions are alkaline and therefore the survival of the Androsperms (.Y sperms) is favoured, at the level of the neck of the womb. Thus the chances of copulation resulting in a male child are increased. The exact time of ovulaton or liberation of the egg by the ovary, is illustrated in the body temperature chart on page

OVULATION TIME



In a cycle of 28 days, ovulation normally occurs between the 11th and 16th day. Most commonly it occurs on the 14th day of the menstrual cycle.

Example of a Body Temperature Chart.

Date	Time	Temp.	Remarks
3.3.75	8 a.m.	98.4	
4.3.75	8 a.m.	98.4	
....	..	..	
....	..	..	
16.3.75	8 a.m.	99.4	Ovulation Day
17.3.75	8 a.m.	98.4	

Body Temperature Chart

However a woman must maintain a body temperature chart in order to ascertain the day of ovulation. This is briefly explained as follows. The woman takes her temperature daily, just before getting up from the bed in the morning. This is carried out every month and a chart is maintained. She will notice that sometimes during the middle of her menstrual cycle, her temperature may rise to 99°F, and sometimes even more. On that day

the woman might feel a little discomfort on either side of her abdomen. This is due to the release of the egg from one of the ovaries. There is also a feeling of malaise on that day. The chart is maintained over a period of two to three months, so that the exact date of ovulation can be determined. There are other scientifically proved methods of determining the time of ovulation, but for practical purposes, the body temperature chart is the easiest.

When the periods are irregular, a doctor's advice can be sought, because in that case ovulation is erratic or not occurring at all. Having pinned down the time of the liberation of the egg, one can embark on the interesting experience of choosing the sex of the baby.

Choosing the female offspring:

The Gynosperms, or X sperms are needed for this combination, hence the object is to make the secretions of the vagina acidic. So that the Androsperms or Y sperms are eliminated. Thus giving the Gynosperms a better chance to fuse with the female egg.

a) Just before the intercourse, a small douche of white vinegar is taken. One tablespoon of white vinegar is mixed with four cups of water, and this douche is taken fifteen minutęs before copulation.

b) Penetration during intercourse may be low, so that semen is released mostly in the lower part of the vagina.

Choosing the male offspring:

Time of ovulation is ascertained. During this time large amount of secretions of alkaline nature, are produced by the

neck of the womb. Alkaline secretions are very favourable for the survival of the Andro-sperm (Y sperm).

a) About fifteen to twenty minutes before intercourse, a douche of a solution of Sodium Bicarbonate, (or baking soda), is taken. One tablespoon of Sodium Bicarbonate is mixed with four cups of water.

b) A douche makes the vaginal secretions more Alkaline. Penetration during copulation must be high up, in order to deposit the semen around the neck of the womb. This enhances the chances of the Y sperms to travel up to the fallopian tubes, and fertilize the egg.

These methods are not infallibly accurate, but it is surely worth a try for those who are very keen to choose the sex of their baby. In my experience with patients, twelve out of the fourteen who followed the instructions carefully, succeeded in getting the babies of their choice.

Growth of the baby:

For the growing conceptus, nature has provided some wonderful and intricate methods of nourishment.

The cells divide and sub-divide, multiplying many times. They then form into a small ball like structure, which soon begins to differentiate into the future organs of the body. This structure is completed by the third month. During this time, the nourishment is supplied by the mother, via the blood circulating in the womb. The medium of supply between the mother and the growing baby, is called the Placenta, or the 'after-birth.' The placenta is attached on one side to the baby, through the Umbilical cord, and on the other side to the womb, which by now is richly supplied with blood

vessels. The placenta weighs about two pounds at birth, and is shaped like a disc. Further details of the placenta and the umbilical cord are given in chapter eight. (see photograph, Chapter 9).

When the baby is developing, it is bathed in a fluid called 'liquor amnii' or the 'bag of water,' as it is commonly called. This liquid, or bag of water acts as a protective measure for maintaining optimal temperature and providing an equal growth of all the organs and limbs in a normal fashion. It has been likened to a 'private pond of the baby.' The baby is free to move in the water without causing any injury to his body. The liquid is constantly changed with intricate methods, the explanation of which is out of the scope of this book. The normal amount of water varies from two to three pints at the time of birth. During the second stage of labour (which is described in the eight chapter), the bag of water bursts, and the head of the baby descends. (See illustration on page 62), Chapter 8.

CHAPTER II

SIGNS AND SYMPTOMS OF EARLY PREGNANCY

Ammenorrhea:

The first thing that a woman notices is the 'missing of her periods,' called Ammenorrhea in medical terms, that is the absence of menstruation. I will not hesitate to say that only a few women remember correctly, their last menstrual period. Those who do, have either been planning their family, or they have good memories.

A vast majority in our country, depend upon dates, only with association of certain occasions; thus making the calculation of their expected date of delivery doubtful. For the sake of avoiding confusion between dates, it would be a good idea to maintain a diary the way western women do.

The reason for missing a period is difficult to explain in non-medical terms. Suffice it to say, that on the liberation of the egg, or ova, from the ovary, and its fertilization by the sperm a conceptus is formed. During this period a hormone called progestogen, circulating in the blood, continues to remain at a high level, and its production is sustained. This prevents the shedding of the lining of the womb, which norally constitutes the menstrual flow. With the increase of progestogens in the body, the activity of its sister hormone, oestrogen is subdued. Their critical values in the body prevents the shedding of the menstrual blood, hence periods are missed for as long as pregnancy continues.

There are a host of other causes for missing periods. The best thing would be to consult your doctor about it, as it might well be severe mental tension, or change in environment. In many cases it might also be early menopause. Certain diseases of the ovaries, thyroid gland, or pituitary gland may also result in ammenorrhea.

Bladder changes:

There is an urgent frequency of passing urine during day and night. This is due to the increased supply of blood to the womb and urinary bladder, causing mechanical irritation, and urge to urinate. This can prove to be rather annoying, but is by no means a disease.

Vaginal discharges:

During pregnancy, vaginal secretions become abundant, and are watery and whitish. They do not cause any itching and are not offensive. These secretions are due to increased vascularity of the genital organs. This should not cause any anxiety.

Morning sickness:

This is the most Common symptom in early pregnancy. About fifty percent of women have active vomiting, either in the morning or in the evening. Sometimes vomiting can occur at the sight or smell of food. Fortunately this symptom disappears after the third month of pregnancy. But it can reappear during the last weeks of pregnancy.

If the vomiting becomes excessive, women begin to feel weak and miserable. In this event doctor's advice must be sought. The doctor will administer intravenous glucose drips, with vitamins especially B-Complex. This will restore the

water and salt balance essential to the functioning of the body, which has been upset by the vomiting. Anti-vomiting tablets such as Meclozine B_6 may be prescribed by the doctor, which are usually taken in the morning.

The reason for morning sickness is not clear. In fact nausea and vomiting may appear even before the periods are missed. There is a general agreement among the doctors, that the factor causing vomiting is the presence of a hormone called Chorionic Gonadotropin which is produced by the growing placenta. Psychogenic factors may play a role in excessive and prolonged vomiting. But in mild cases psychological factors do not play a major role.

Excessive Salivation:

Increased secretions in the mouth appear in early pregnancy and sometimes throughout pregnancy. For this reason one notices that there is a predilection or preference for sour and spicy foods. Women like to take pickles (a very symbolic thing in movies). They develop certain food 'fads'. They like to eat foods which were previously not of their own choice. Smokers stop smoking, and others cannot tolerate certain perfumes and smells.

There is a peculiar feeling of laziness and lassitude. This general malaise is annoying not only for the relatives, but for the woman herself. However, this is not a lasting symptom and disappears in a few weeks.

Breast changes:

The breasts begin to tingle, and there is a heaviness due to the increased blood supply. Certain changes occur which are as follows: Firstly, there is a discolouration of the nipples and the area around it called the Areola. This area becomes

dark brown. Secondly, small projections appear around the nipple, called Montgomery tubercle. Thirdly, during the third month of pregnancy, secretions begin to ooze from the nipple. Lastly, pregnant women experience occasional pain in both the breasts. This should not be considered serious, and only a tight brassiere will eliminate the discomfort. See photographs, below.

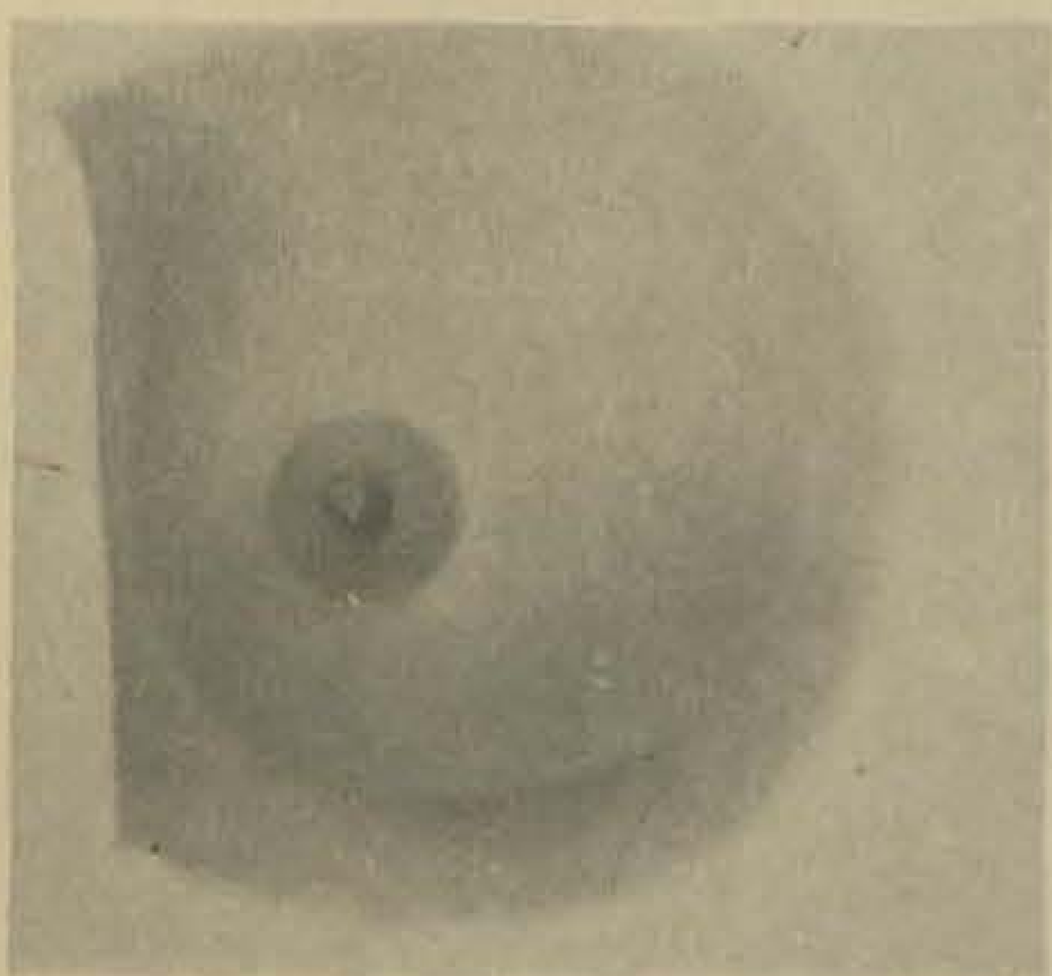


Fig. no. 1. Non pregnant breast. Note the size and colour of areola.

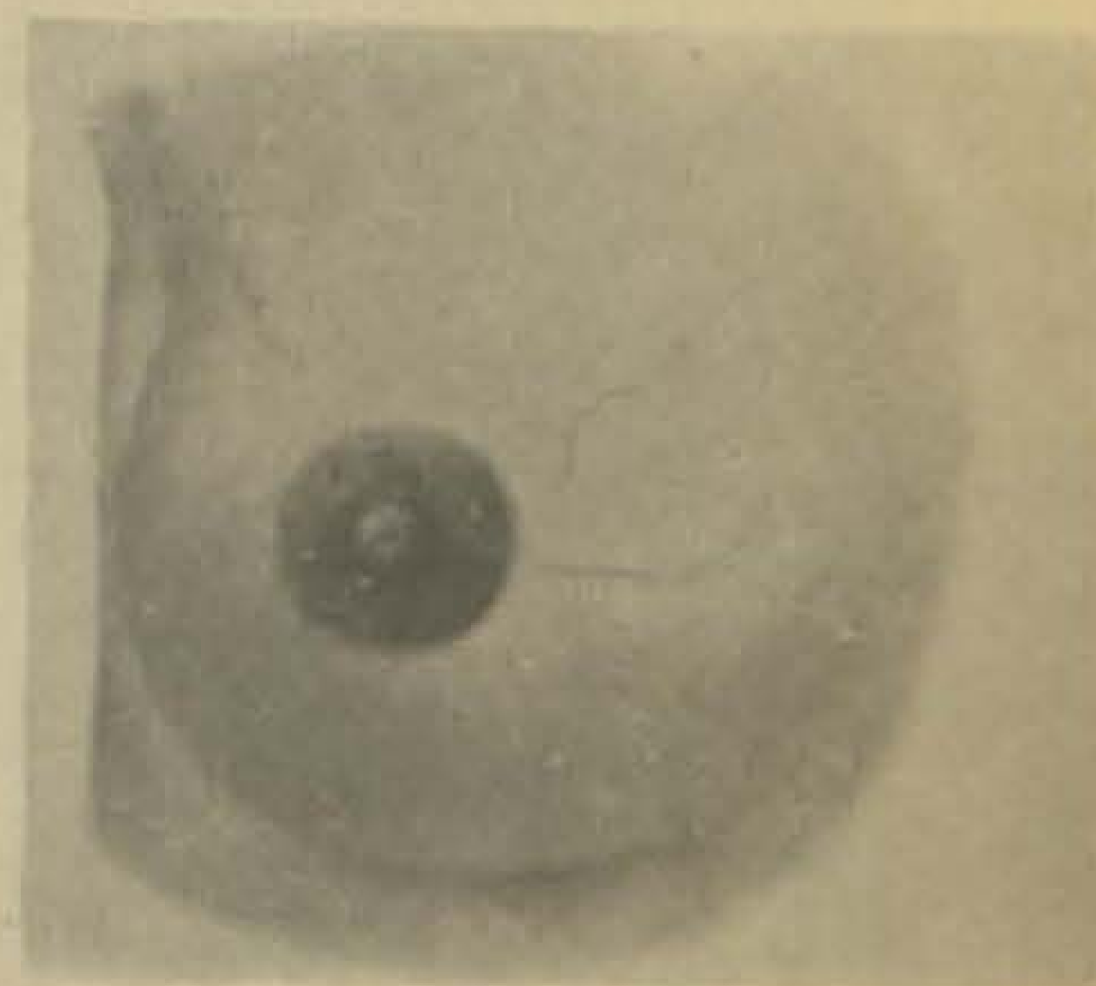


Fig. no. 2. Breast of a pregnant woman. Note the excessive pigmentation around the nipple, and engorged veins.

Emotional disturbances:

In the early months of pregnancy, a woman becomes emotionally disturbed, and cries at trivial matters. She also becomes irritable and suffers from bouts of depression.

During mid-term and later part of pregnancy, she becomes more settled and serene. In fact most women look their best in beauty and health, as they become reconciled to the physical and psychological changes of pregnancy.

As the term approaches for labour, there is again a feeling of dejection and apprehension, which remains upto the third or fourth day of delivery. During these days, a woman becomes weepy and finds faults in almost anything. This period is probably an anti-climax, so understanding doctors and nurses, knowing these facts will be more sympathetic towards the patients.

Skin changes:

Skin becomes oily, and hair begins to feel greasy. Sometimes acne and pimples become aggravated, causing women to worry excessively. In these cases chocolates and sweets should not be taken. But these conditions disappear spontaneously in due course. In many women, brownish pigmentation appears in a butterfly shape around the nose and around the cheeks. This is due to the increase in another hormone, called Melanocytic hormone. These brownish patches occasionally remain after the delivery, but in most cases do not remain permanently. Dark brown line appears between naval and pubic area. Silvery lines appear on abdomen as the pregnancy advances. These lines may cause itching and when the women scratches they become more prominent. I advise them to apply olive oil. In the large majority the lines are permanent.

Conformation of pregnancy:

As has already been stated, one can miss periods for other reasons besides pregnancy. Nausea, vomiting and malaise can be symptoms of liver disease, urinary tract infection, or anaemia. It is important therefore to confirm pregnancy by a laboratory urine test. Nowadays rapid tests are made with only a drop of urine on a slide which is treated with certain reagents. A report can be obtained in two

minutes, and the diagnosis is confirmed upto a ninety-nine percent accuracy.

The womb, or the uterus, does not become perceptibly enlarged until eight to ten weeks of pregnancy have passed. So if the pregnancy is precious, it is all the more reason that an early diagnosis be made, so that the treatment can be started early.

The baby begins to move in the womb after sixteen weeks of pregnancy. A woman becomes aware of these movements, which can be likened to 'the fluttering of a bird'. As the pregnancy progresses, the movements become clear, and at twenty-seven to twenty eight weeks of pregnancy definite movements of the limbs and feet can be discerned. Sometimes the whole bottom of the baby moves from side to side, which the patient may take for a lump moving in the abdomen.

A great influence is exerted on the baby by the behaviour of the mother. If the woman becomes excitable or irritable, the movements increase. If she remains calm the movements are normal. In any case they are not significant and should, not cause any alarm.

Planning of Ante-natal Care:

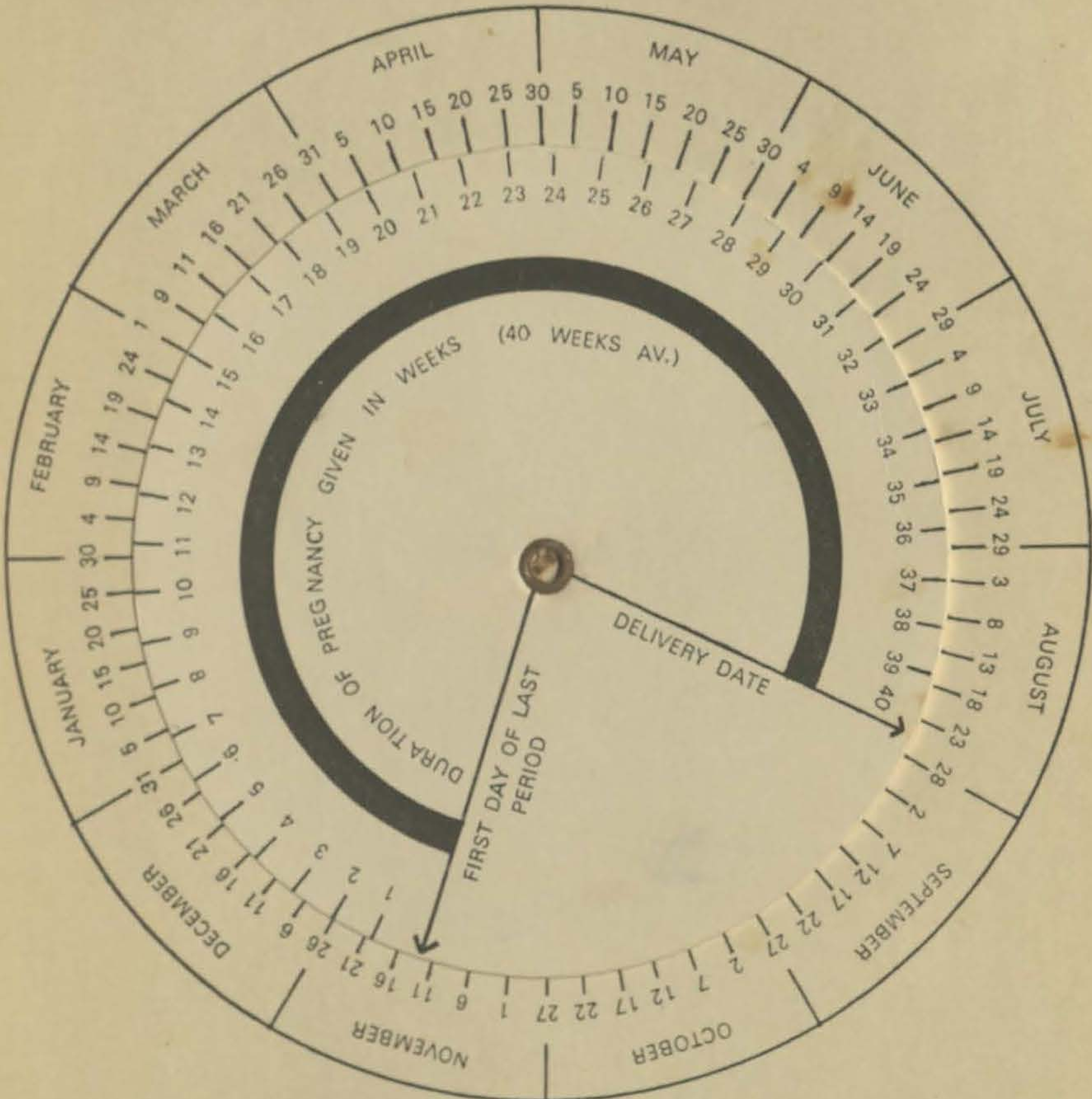
Usually the first step is to choose a consultant obstetrician, or a general practitioner who will look after the woman throughout her pregnancy, labour and post natal period. The majority of educated women enter their names on hospitals or private clinics.

Some women plan to have their babies delivered at home by a doctor or a mid-wife. I presume that the readers of this book will choose a hospital delivery, for obvious reasons of

safety. Approximately seventy-five percent of women in Pakistan have home deliveries, and only twenty-five percent have an access to hospital delivery. This is due to a lack of hospitals and maternity homes. It cannot be over emphasised that the best possible place is the hospital and clinics, where all facilities are available to cope with unforseen complications.

A simple method to calculate your own expected date of delivery. How to operate the chart.

Place the arrow of small circle labelled L.M.P. on your 1st day of your Menstrual period, along the column of the month. Then observe the arrow labelled E.D.D. the pointer indicates the approximate date of your delivery.



JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
DURATION OF PREGNANCY GIVEN IN WEEKS (40 WEEKS AV.)
FIRST DAY OF LAST PERIOD
DELIVERY DATE

CHAPTER III

BOOKING AND ANTE-NATAL EXAMINATIONS (ROUTINE PROCEDURES)

On booking in a hospital or a private clinic, the doctors take a full past and present case history of the patient, and note relevant points regarding their family history. If a woman has already had children, a complete history is taken regarding the mode of her previous deliveries, the sex of the babies and their weights. These points help to make an assessment as to the state of pregnancy and future course of management.

If the history of the patient indicates mis-happenings such as spontaneous abortions, still births, premature deliveries, or certain abnormalities with the children, the doctor's responsibility becomes vital, and as far as possible, steps are taken to avoid these mis-happenings, which are called "bad obstetric history" in medical terms. Relevant history includes diabetes and high blood pressure. A history of epileptic fits in the family is noted down. Tuberculosis in the family is important, to note and so is rheumatism, and rheumatic fever in the patient herself.

Previous urinary tract infections, or operations on the abdomen in the past are recorded. Blood transfusion given to the woman for any reason must be noted down. Conception of twins is also relevant, and this kind of interrogation should not cause anxiety in the woman.

A complete history is therefore imperative for a successful outcome of pregnancy.

During the first visit, the urine of the woman is checked for albumen and sugar. The woman's weight is taken, and height is noted down. Blood pressure, and the heart, lungs and abdomen are checked. The feet and legs are examined to rule out varicose veins or the presence of any swelling. A sample of urine for laboratory examination is taken, and if there is evidence of infection, timely treatment is administered.

A vaginal examination is carried out to rule out accompanying disease of the vulva and ovaries. A vaginal examination also confirms the diagnosis. If there is excessive discharge, which is yellow and offensive, a vaginal swab is made and cultures are taken.

From abdominal examinations, nothing can be felt above the pubic area unless pregnancy is 10 weeks and above.

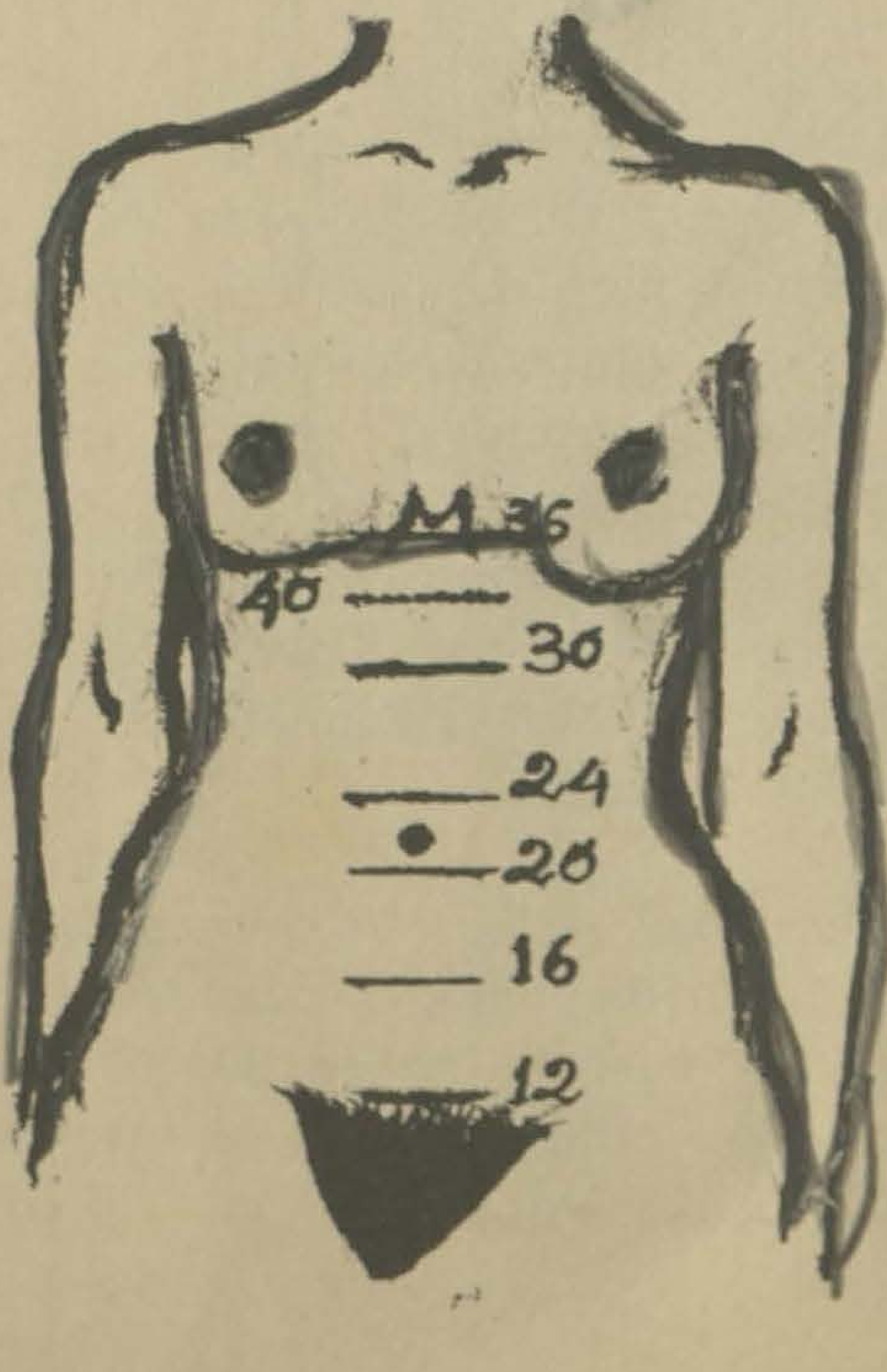
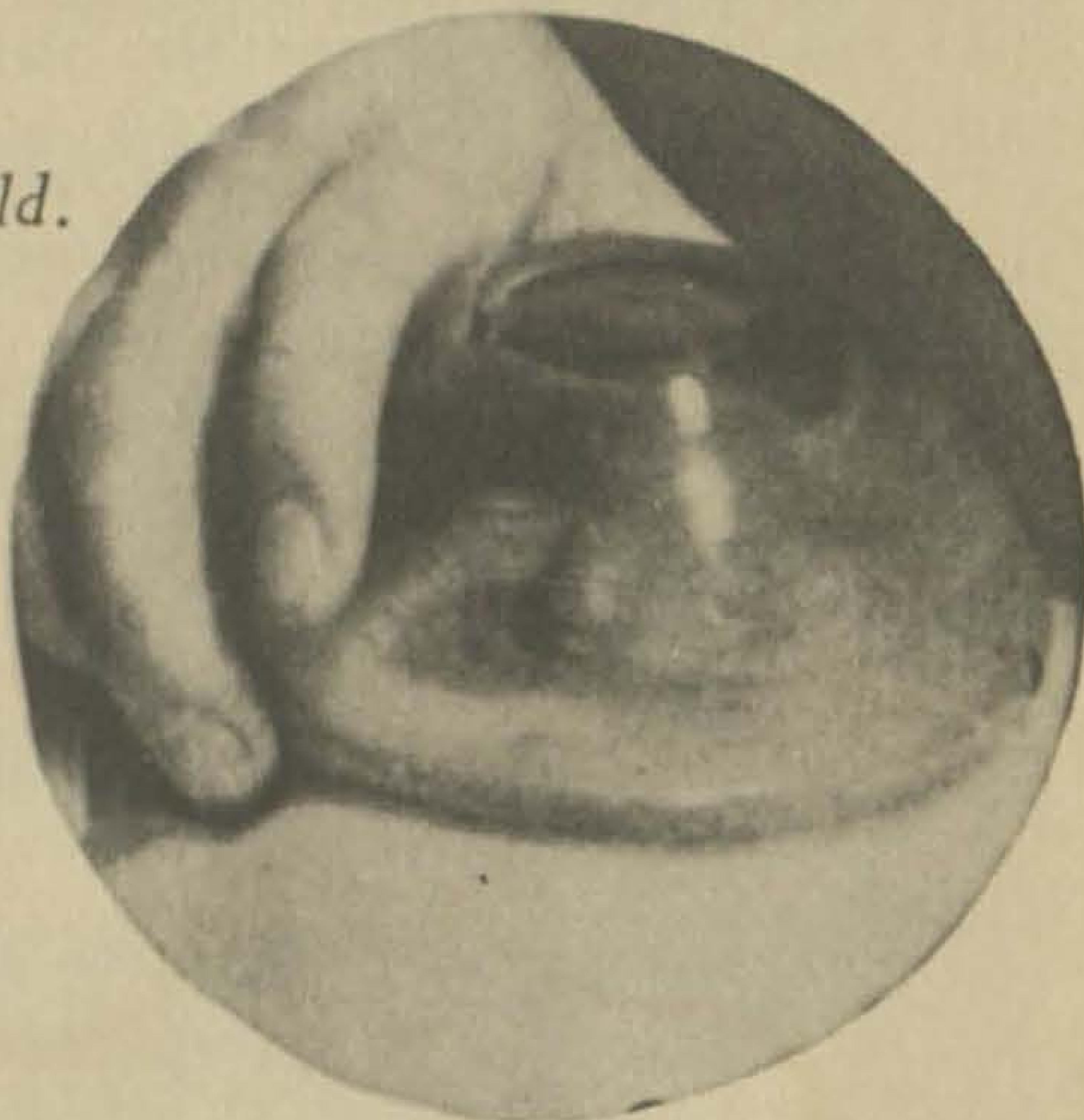


Diagram showing levels of the hieght of the womb according to the dates in weeks.

Breasts are also checked and the state of the nipples is noted. Whether they are small, inverted or crusted. If they are small and inverted (see pictures) the doctor advises the woman to pull the nipples out daily during the bath, and also if available, should wear a 'Waller glass shell' which will have a beneficial effect during the latter part of pregnancy, since it has a minor suction effect. If the nipples are crusted, a simple soap and water cleansing will suffice.

Waller glass shell sheild.





Inverted nipple.

Waller glass shell sheild. This is used during pregnancy for inverted nipples. It has a mild suction power and could be worn under a brassiere. Teeth are examined, and if they are not healthy, the woman should see a dentist.

Laboratory Tests:

It is of great importance to have the haemoglobin in the blood checked, to see whether the patient is lacking in haemoglobin or not. Any haemoglobin count below 75 per cent needs proper diagnosis and treatment. The normal haemoglobin during pregnancy is approximately 90—95 per cent.

However, treatment should be administered in time

lest the woman becomes too anaemic and may need iron injections or even in extreme cases, a blood transfusion.

Haemoglobin levels in the blood should be checked every month, because of the gradual fall in the level on physiological grounds. The demand for iron by the womb and the baby is increased. Therefore intake of iron should be increased. Besides foods rich in iron, the diet should be supplemented by iron capsules or tablets.

Some patients find iron tablets causing either constipation or loose stools or even gripes in the stomach. I feel that ferrous sulphate with folic acid capsules are best. In this case iron is non-irritant and is absorbed slowly. Iron capsules must be taken while having meals and not before and after meals.

Blood groups and Rhesus Factor:

It is extremely difficult to encompass a vast subject like this in simple and comprehensive language. The mere basic data may even confuse the reader. I have therefore made an endeavour to make it short as well as explicit, so that the reader may find it of practical value.

Each human being has a particular blood group of his or her own type. There are four types of blood groups, and each person belongs to one of them. They are as follows:

A. group B. group AB. group O. group

A woman may either be A, B, AB or O. She cannot have two types of blood; and the blood group that she does have will never change. The blood group that she is endowed with, is inherited from one of her parents. Besides these four basic blood groups, there is a very important factor attached

to the group. This factor is called Rhesus factor, commonly labelled as RH. factor.

R. H. Factor

This name is derived from the rhesus monkey. Whoever has this factor, he or she is called RH. positive. The absence of this factor is called RH. negative. The proportion of people who are RH. negative varies according to race. For instance in China, it is most uncommon. But by and large twenty percent of people are RH. negative, and eighty percent are RH. positive.

The rationale of stating this is that, if a woman with RH. negative blood marries a man with RH. positive, some complications may occur in the baby. What happens is that if a RH. negative woman is carrying a RH. positive baby (the RH. positive being inherited from the father), certain elements in the mother's blood, appear in the form of anti-bodies. These anti-bodies in turn affect the baby adversely, causing jaundice at the time of birth. This subject is so intricate, that the less said about it the better. But this is on no account means to frighten the woman, because there are ways and means to treat her in a preventive manner. The successful treatment of the baby can also be accomplished in expert hands.

The first babies of such mothers are not affected, because enough anti-bodies are not produced to damage the blood of the baby. But the second, third and the fourth babies are affected by this factor. Nowadays an anti-D. material is available called Rhogam. This injection is given to the mother (RH. negative, with RH. positive husband). This is done, during the first delivery, if the baby's blood group is RH. positive, within twenty-four to seventy-two hours of delivery. This prevents the further production of

anti-bodies, and hence the damage to the subsequent pregnancies is averted to a great extent.

All said and done, if a woman is RH. negative and the husband is also RH. negative, then there is nothing to worry about, for harmful anti-bodies will not be formed; and the jaundice of the baby will not develop. This has been explained in order to emphasise the importance of the blood group and RH. factor of the mother which is a routine procedure in ante-natal visits.

Other blood tests:

Besides blood groups, other blood tests include V.D.R.L. or Kahns test. This is performed in order to exclude the possibility of Syphillis, which is contracted during intercourse. This test, however, should not cause anxiety, as it is usually negative. But the significance of this test is so great in view of the baby in the womb, that no doctor hesitates in taking it as a routine procedure.

Antenatal visits:

After the initial check up in an antenatal clinic, the woman is asked to report back every month, to check weight, blood pressure, urine, and an assessment is made of the growth of the baby. Provided there are no complications, a woman is seen at least every month until twenty-eight weeks, thereafter every fortnight until thirty-six weeks, and then weekly until delivery. If there are any complaints during this period, the doctor notes them down and gives appropriate medication.

The period of pregnancy is divided into three parts. A normal pregnancy lasts for forty weeks, and hence a conway is to roughly separate these weeks as follows:

The first trimester lasts from the time of conception to sixteen weeks.

The second from sixteen weeks to twenty-eight weeks of pregnancy.

And the third trimester lasts from twenty-eight weeks, till forty weeks, when the baby is delivered.

The weight gain should not exceed five pounds in any one month, or one pound in a week. The maximum permissible weight gain is twenty-one to twenty-eight pounds throughout pregnancy. The figure of twenty-one pounds is made up of seven pounds in the first twenty weeks, seven pounds in the next ten weeks (twentieth and thirtieth week), and finally seven pounds between thirtieth week and at term.

Use of an Echosounder:



In this picture the echosounder is shown while being used. With this machine the heart beat of the baby is heard clear and loud through a built in loud speaker in the gadget. It is an invaluable machine for the doctors for diagnostic purposes. Note the reassuring smile on the mother's face as she listens to the heart beat of her baby.

Psychoprophylaxis and Antenatal Classes for decreased pain in child birth.

It is a well-established fact that ignorance and fear of the unknown can be objectively corrected by educating the women with regard to labour and child birth.

The object of psychoprophylaxis is to focus the attention of patients less on labour and its possible difficulties, and more on the final goal of getting a healthy baby. A majority of doctors, on an individual basis and also in group therapy, recommend lessons in muscular relaxation, physiology of pregnancy and labour.

The woman also gets an opportunity to get to know the place where she will face her coming ordeal, and about the people or attendants who are going to help her through it. Thus she becomes familiar with the place, and for this purpose the delivery room is usually shown to her; so that she does not feel out of place when the time for delivery comes.

Antenatal classes and psychoprophylaxis keeps the woman fit and provides her with greater confidence. There are about twenty different kinds of relaxation exercises, but the simplest one that I find is outlined on next page.

Before I embark on the proper exercises, it is worth mentioning that during labour women do become either extremely depressed or wild and uncontrollable especially in our country. The ones who are educated and have read books on the subjects invariably do the relaxation exercises in a very haphazard manner. The breathing exercises in an exaggerated fashion—for instance, they start untimely panting and confuse the whole issue. For this reason alone, I found it imperative that only two or three types are taught, with which they do not become exhausted, and are as effective as other cumbersome exercises.

Relaxation exercises:

Many of the methods place too much emphasis on complicated exercises. In my view, the simpler the exercise, the better it is, as both the patient and doctor find it easier.

The choice of words used for "conditioning the patient," is more important, than the rigorous exercises described in many books. The usual words are deliberate, soft and appropriate, suiting the particular stage of labour. For instance "all is going to be alright, you are doing a fine job" and so on. Remember these are relaxation exercises and not body building ventures. Whatever the case, the main object of physiotherapy, and the ability of the doctor to get it over to the woman is of great importance. The simplest and most effective ones are as follows;

1. During the first stage of labour, simple shallow breathing is carried out. This breathing exercise has several functions. The salient among them is the diverting of the attention of the woman from labour pains, which may cause her to hold her breath. The conditioned and trained woman ensures continuous absorption of oxygen by the lungs.

2. As labour progresses, the attending doctor has already conditioned the woman to take deep long breaths and push out her abdomen upwards as far as possible. She should then hold her breath upto the count of four, and then release her abdomen, so that it comes down to its initial position. The best way to carry out this exercise, is to lie on the back and put both hands on the summit of the abdomen, with the finger tips of both the hands touching each other. See photographs.

By means of this method, the abdominal muscles are lifted above the womb, thereby allowing it to contract independently and effectively.

3. Leg exercises:

The woman lies on her back with a small pillow under her head. Both the legs are pressed on the body and are bent up at the knees.

Antenatal breathing exercise.



Fig. no. 1 and 2. Lying on back place both hands on the summit of abdomen, so that fingers of both the hands are approximated. Take a long deep breath, and then exhale the air with the mouth closed, while exhaling blow the abdomen upwards as much as possible so that the fingers are seperated from each other for a distance of about one and a half inch. Count four and then let go. Relax. Do this exercise six to ten times at bed time.



Antenatal leg exercise:

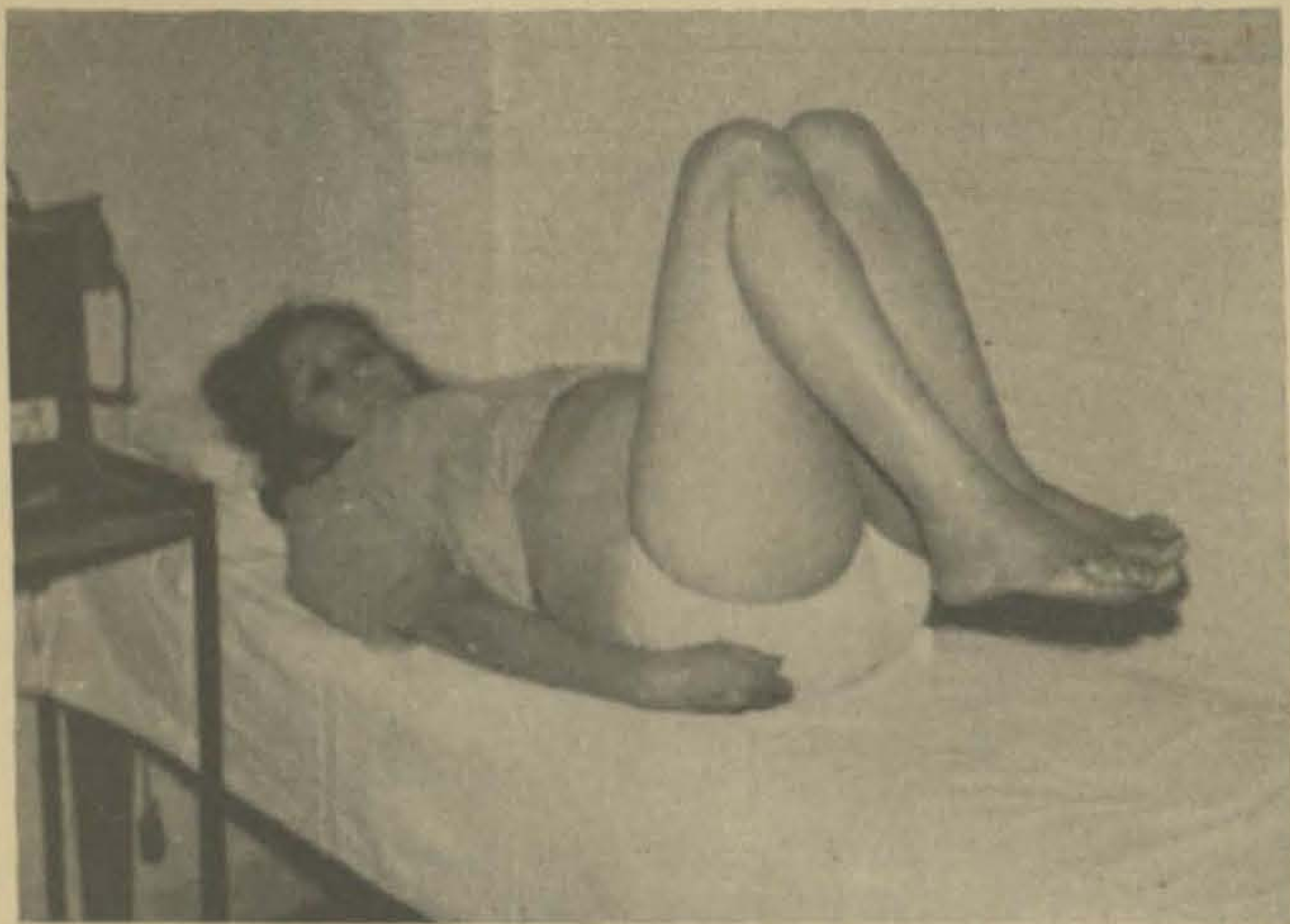


Fig. no. 3 and 4. Slowly bend the knees, lifting both the feet off the bed. Gradually seperate the legs as far as possible without discomfort. Return to first position. Repeat ten times.



The thighs should be pressed against the abdomen, with the feet suspended. The legs are slowly brought together, and then slowly spread apart. This exercise enables a woman to condition herself for actual delivery, which is usually performed in the same position (Lithotomy). It strengthens the ligaments and muscles of the thighs and legs. This may be performed once a day for ten times.

4. The actual pushing technique used during the last stages of labour are neither easy to learn, nor advisable in my view. The urge to push when the head of the baby tries to emerge, comes naturally. During this period I advise the woman to take long deep breaths, and to push down, as if she were daefecating with difficulty. A continous effort must be made, instead of short bursts of ineffectual pushing.

By practising these exercises, the woman is conditioned for labour, and the womb contracts painlessly. The woman will experience little discomfort, if any at all.

Remember that child bearing is a natural phenomenon. The major role is played by the mind. An important axiom is "a tense mind results in a tense uterus."

The attending doctor may be firm, but friendly. They want the best out of the patient and will help her accordingly. In my experience, these kinds of exercises shorten the labour by half the time without exhaustion. A number of patients despite all the pre-arranged exercises, forget everything during labour. It probably is that adequate training has not been given by the doctor, or the sister may be blamed for it.

However, for such patients, pain and discomfort can easily be reduced by giving a mixture of fifty percent oxygen, and fifty percent of nitrous oxide gas, commonly called 'gas mask.' or Entonox mixture. This can be found to be very helpful, and it presents no danger to the baby.

CHAPTER IV

DIET AND PREGNANCY HYGIENE

Diet:

The importance of a proper diet cannot be over-emphasised during pregnancy and the lactational period. A proper diet increases the chances of a normal delivery, and a healthy baby. The mother can also resist diseases and other unforeseen complications better. It is a recognized fact, that the occurence of still-births, prematurity, and neonatal deaths is greater in the women with poor physical and mental health. Proper nourishment to the mother and her growing baby is, therefore, extremely important.

A lot of stress is placed upon including essential food factors, such as minerals, vitamins, proteins and iron in one's diet. Ingesting large quantities of fats and carbohydrates, is not only unnecessary, but also dangerous, in the sense of gaining too much weight. An expectant mother should be fit and healthy, and not over weight or lacking in energy.

Proteins:

These are essential in building up the body tissue and blood of the woman, as well as that of the baby. Protein diet is as follows: Animal protein: Meat, fish, milk and eggs have a high biological value. They contain certain amino acids or the basic building elements, without which the body cannot synthesize or make tissue. The required amounts are given in a special diet list included in the book.

Effects of deficiency:

Lack of protein in the diet will cause anaemia. Oedema (or the swelling of face, hands and feet), and general debility. Protein is essential for the building and maintaining of body tissue and its importance cannot be over-stressed.

Iron:

The intake of iron, besides that which is found in natural foods is of great importance. The baby at birth contains four hundred mg. of iron. The growth of the womb and breasts requires iron. About five hundred mg. of iron are stored there during pregnancy. The daily extra intake of iron during pregnancy is around fifteen to twenty mg, so that the correct levels are needed for the pregnant woman to maintain her iron contents.

Effects of the deficiency of iron:

The most important effect caused by the lack of iron is anaemia. Since the average woman cannot take in the required amounts of iron in her normal diet, the doctor advises that the diet be supplemented in the form of iron capsules and tablets which should be taken throughout pregnancy and lactation. Besides anaemia, prematurity, foreceps delivery, excessive bleeding in the third stage of labour, that is when the after-birth is expelled, and a temperature after the birth of the baby also result due to the lack of iron.

Calcium and Phosphorous:

These elements are essential for the proper development of the babies bones, and are of vital importance from the twenty-eighth week of pregnancy, until the end of the term, as well as during lactational period (or the breast feeding period.)

The baby at birth contains about twenty-four grams of calcium, fifteen grams of phosphorous, and about two-thirds of it is accumulated during the last two months of pregnancy.

A premature infant, due to being delivered earlier than usual term, misses the chance to accumulate calcium and phosphorous and is, therefore, more prone to rickets. It is thus important to prevent pre-maturity as far as possible. The best source of calcium and phosphorous is pure milk, two large glasses of which are needed to supply one to four grams of calcium. The rest of the calcium is obtained from foods such as cheese, eggs, cereals and green vegetables. Phosphorous too is obtained from these natural foods.

Effects of deficiency:

If calcium is deficient in the diet, there results a lack of this and Vitamin D, in the blood. The gross lack of calcium is rare in these days, mainly due to the better education of women, as regards calcium rich foods, such as milk. Vitamin D, is manufactured under the skin, by the interaction of sunlight and a fatty substance called Ergesterol. Sometimes a silent kind of deficiency may manifest itself by restlessness, twitching of the muscles and pain in the legs and thighs. A difficulty is also felt in walking. The effect on a child of the deficiency of calcium and vitamin D, is felt in the presence of rickets and dental disease.

Vitamin A:

This is an important vitamin in the building of bone structure and the maintenance of skin. Night blindness also results by the lack of vitamin A. There is also a reduced resistance to disease. Vitamin A is found in natural foods such as eggs, liver oil extracts, liver itself, and in certain vegetables, especially carrots. In severe cases, the lack of this

vitamin results in fatigue and anaemia. There may also be changes in the conjunctiva of the eye.

Vitamin B:

This is a very complex vitamin made up of vitamins B_1, B_2, B_6 and B_{12}. etc. The deficiency of these vitamins may cause excessive vomiting in pregnancy, inflammation of the tongue, heart burn and a special type of anaemia. This vitamin is found in various types of cereals, especially yeast, whole meal flour and bread.

Vitamin D:

This vitamin controls the absorption of calcium. The daily requirements are four hundred to eight hundred I.U. (international units) during pregnancy. It is found in small amounts in natural foods such as egg yolk, milk, cheese and butter. Large amounts of it can be found in fish liver oils. Although a large amount of the body requirement is made in the skin, it is advised that during pregnancy fish liver oil be taken, especially by those women who observe 'purdah', since they do not receive an adequate supply of sunlight. The effects of the deficiency of this vitamin is due to the lack of absorption of calcium, resulting in the deficiency (less than normal requirements) of calcium in the blood.

Vitamin E:

It is present in wheat germ and in green vegetables. It is essential to maintain the early growth of the embryo (baby) and the placenta.

The prescribed diet during pregnancy:

1. Two glasses of milk daily.
2. One or two substantial servings of green vegetables,

such as cabbage, spinach and one or two potatoes.

3. An apple, or an orange or some fresh fruit at each meal.
4. One helping of red meat daily.
5. Sea food two times a week.
6. Calf liver once a week. (Rich in vitamins A and B.)
7. One or two slices of bread, or one chapati at every meal.
8. One helping of boiled rice, preferably at lunch.
9. One egg daily. Cakes, Pastries and Parathas should *not* be taken frequently.

PREGNANCY HYGIENE

Regular Exercises:

Most expectant mothers get enough exercise during household chores, but this is not the best kind of exercise. An attempt must be made to spend at least one or two hours a day in the open air. Bedroom windows must be kept open, no matter what the weather is.

Violent exercises such as swimming, cycling and riding etc. should be avoided. It must be kept in mind that the pregnant woman should never get fatigued. Special antenatal relaxation exercises classes are more than sufficient. These exercises also help the woman to remain fit. (See the chapter on Psychoprophylaxis.)

Rest:

This is mostly determined by the individual's own inclination, but at least two to three hours should be spent lying down, with the shoes off, and loose clothes should be worn. The woman should ensure that she gets at least eight hours of sleep during the night.

Cleanliness:

A warm bath should be taken daily in winter, and twice a day in summer if that is possible. Every time the woman goes to the toilet, it is essential that she wash her urogenital areas, which should not have any contact with the anus. Stress is put on the methods in order to avoid contamination of the vulva and vagina, by germs from the anal region. If one can carry this out successfully, then there is little reason to have any vaginal infection during pregnancy. Swimming and bathing in the sea may be carried out if the weather is suitable, but over-exertion must be avoided.

Travelling:

Travelling by road, train or sea during the first half of pregnancy is not unsafe, if there is no past history of miscarriages. If there have been episodes of minor bleeding, then such a mode of travel is forbidden. Air travels are safer. Long journeys must be avoided.

Smoking:

The effects of nicotine found in tobacco, are definiately harmful to the growth of the baby. Nicotine stimulates the muscles, lining the arteries, causing them to become constricted (narrow). This reduces the blood supply to the womb, and thus to the baby. It is therefore easy to reason that the growth of the baby will be hampered. Pre-mature delivery, miscarriage, can result from smoking. In any event, smoking results in the baby born under weight. (Small for dates).

Intercourse:

Intercourse may be avoided during the first fourteen weeks, especially if there is a past history of miscarriage.

After the fourteen weeks period, the placenta is securely attached to the womb, and intercourse may be carried out. It should be avoided during the last three months of pregnancy. Between the two critical periods the position of intercourse should be lateral, that is lying side by side. If the woman is lying on her back, undue pressure of the husband may cause discomfort. Deep penetration by the husband should be avoided.

Clothing and shoes:

Clothes should be worn according to the weather. Maternity dresses are good for the sake of ease. Tight fitting clothes should be avoided. Elastic bands should be used instead of strings for those who wear shalwars (or pantaloons).

Some patients wear saries. These are not only cumbersome to carry and wear, but are also time consuming, and are a problem when women come for antenatal treatment. Cleanliness cannot be over-emphasised during pregnancy. Underpants must be clean and made of cotton. The ones made of nylon cause heat and moisture and may result in rash along the insides of thighs.

Proper shoes are extremely important, so high heels are not without danger. Shoes with one or two inches of heels and with broad toes are comfortable. These types of shoes make a pregnant woman's walk more graceful, and prevent accidents which may occur with high heels.

CHAPTER V

MINOR AILMENTS DURING PREGNANCY AND THEIR TREATMENT

The majority of women are apt to suffer minor discomfort now and then, even when the pregnancy is progressing normally. The usual ailments with their treatment are given below:

Constipation:

This is the most common disorder, and it is due to the lack of execrise, improper food and sluggish bowels. Latter is caused probably by the circulation of large amounts of a hormone called Progestogen. This hormone relaxes the muscles of the guts and prevents their normal movements. (Peristalsis).

Preventive measures are best taken to avoid constipation, such as taking food with plenty of roughage (vegetables, etc,) and having a glass of water early in the morning. This causes movements in the bowels, and deafecation becomes easier.

A regular habit of going to the toilet in the morning will prevent constipation from becoming chronic. If, however, the condition is not improved with the methods described, laxative tablets should be taken. In my opinion, the safest laxative is Milk of Magnesia, of which four to six tablets should be taken at bed time. If the tablets are not available,

then two table-spoon full of milk of magnesia suspension should be taken.

If the patient takes liquid paraffin, it coats the inner lining of the stomach and the intestines. This prevents the absorption of essential foods. I, therefore, hesitate to recommend this treatment, unless piles is the complaint. Dulcolax tablets, commonly recommended as a treatment, cause a lot of gripes, and in certain cases even diarrhoea. Castor oil must never be taken, as it can cause false labour, and this results in unnecessary anxiety to the expecting woman. Nervous tension can lead to constipation. This can be relieved by consulting a doctor, who will certainly allay much of the fears, and will endeavour to find the cause of tension. The doctor will prescribe some mild laxative. It is unwise to take a strong laxative, without the advise of a trained physician,

Haemorrhoids (Piles).

Piles usually appear during the later months of pregnancy and labour. They disappear after delivery, or are greatly diminished. The reason for their appearance is usually constipation.

Morning Sickness:

In most pregnant women, morning sickness is due to emotional fears and apprehension. In the majority of cases there is nothing to worry about. What is needed is reassurance and simple suggestions. The woman should divert her mind from her own state of affairs, and get busy with making plans for the baby.

Here is where the role of the husband is vital. In a majority of cases, the husband becomes extra concerned, fussing

unnecessarily for his wife over trifles. This is indeed harmful because in many women it makes wonderful excuse to be loved. But this kind of love and care is not lasting. The husband, usually gets "fed up". The women therefore must be very careful and should control her symptoms if they are genuinely minor. What the woman needs is small amounts of dryish foods, such as biscuits, toasts, etc., at frequent intervals. Let the woman pick and choose what she likes, as long as she avoids fatty foods in the morning. Morning sickness is undoubtedly unpleasant, but not dangerous or lasting. (See Chapter 3 for early signs of pregnancy).

Heartburn :

This is an accompaniment of pregnancy, and is caused either by lack of, or excessive acidity in the stomach. Taking aerated water will only serve to aggravate the condition. If heartburn is due to excessive acidity, the woman must refrain from richly cooked food. She should also avoid aerated water and pickles etc. These days tablets are available to counteract hyperacidity in the form of antacid. These medicines are chewable and pleasantly flavoured. They must be taken two at a time after each meal. Over-eating must be avoided.

In the later months of pregnancy, when the womb rises in the abdomen, the stomach is pushed towards the thoracic cage (ribs), and the lower part is splayed out. Thus the capacity of the stomach is reduced, and acidic flow from the stomach irritates the gullet (or the oesophagus), thereby causing heartburn. In this case stress is placed on taking small amounts of food at frequent intervals, and antacid tablets.

A condition called Hiatus Hernia, may occur during the last trimester of pregnancy. This is diagnosed by the doctor, who will advise the woman to stop stooping, and to use two

or three pillows while lying down, so that the food may not go up into the gullet.

Cramps:

During pregnancy, cramps are a very common ailment, and are probably due to the lack of calcium. Cramps appear in the legs mostly at bed time. The doctor prescribes calcium in any form. The one I would suggest are tablets of Calcium Pentothonate or Ostocalcium with Vitamin D.

In summer, due to excessive sweating, there may result a deficiency of salt in the body. In this case blood pressure is usually low, and the doctor may prescribe a pinch of salt with a little water during cramps, so that relief is obtained. Deficiency of Vitamin B, may be the causative factor, and it is advisable to prescribe it if all other treatments fail.

Low Backache and Pain in the Legs:

This is a very common and annoying ailment during pregnancy, Its main cause is the wrong posture of the woman while sitting or standing. The reason is that a woman carries extra weight in her abdomen. In order to walk, she tries to keep her balance, so that the axis of gravity is maintained. She therefore walks with a protruding abdomen, causing a forward bend in her spine. (Lordosis). In this exaggerated posture, there is strain on the ligaments. Therefore the nerves are slightly stretched, causing backache, and pain in the legs. One of the treatments is holding a correct posture, while sitting or standing, as shown in Chapter 10.

Treatment:

In recent months myself and my Associate, Doctor Faiza Hasan, who is a trained Acupuncturist have tried this wonderful treatment for low backaches in pregnant women. Of the

forty patients with backache during pregnancy, thirtyfive obtained complete relief and in the remaining five the pain was much relieved. Along with this treatment correct postures of standing and sitting were advocated. No untoward effects were noted in the baby or the mother herself. More and more patients are asking for Acupuncture treatment because of its simplicity and rapid relief. The material used is very fine stainless steel needle and the procedure is almost painless. The duration of treatment is only on one or two occasions, and takes about five minutes to carry out.

Other causes of low backache and pain in the Sacroiliac region, (the pelvic region, joints etc.) are not easy to explain. It is enough to say that during pregnancy, a substance called Relaxin, circulates in the blood. Not only Relaxin, but also Progestogen (mentioned in the earlier chapters), acts and causes the ligaments of the joints to become soft. Mobility in the joints is increased, and sudden movements can bring about a 'catch' in the ligaments, causing pain and constant discomfort.

Other Treatment of Backache:

Sleeping on foam or rubber beds should be avoided. Ordinary cotton mattresses are much better. The woman may sleep on her left or right side, with a pillow between her legs. Taking of Aspirin and other forms of painkilling drugs must be avoided. They are not only very temporary in their effect but can affect the baby and the patient herself.

Massaging the expectant mother is not recommended as it does more harm than good.

Sleeplessness:

A pregnant woman occasionally finds difficulty in sleeping at night. All kinds of worries can cause tension, especially

if it is the first pregnancy. It should be emphasized that the pregnant woman should not get the wrong frightening notions, because nature has provided a wonderful way of delivering the baby. (In reference to Chapter eight), the woman will find that at a hospital, the doctors and nurses will be there to help her. But her own efforts are of extreme importance. The woman should rid of her thoughts of any fears and leave things to nature.

Sometimes daily household chores make the woman upset, preventing her from getting her normal natural sleep. I usually advise the patients to count their blessings, rather than counting sheep. The woman should try to divert her mind from natural fears, and should concentrate more on happier events to come. Sleep can be improved if the windows are kept open to allow ventilation. Moreover, light clothing should be worn, and a bath be taken before going to sleep.

In severe cases of sleeplessness, trained medical help must be sought. The doctor will prescribe mild tranquilizers, such as Diazepam (formely called Valium 2 or Valim 5). This drug is not harmful as such. However a formation of a regular habit of taking these drugs is not without danger; and when healthy sleep is restored, the drug should not be taken frequently.

Sleeping late at nights, parties and visits should be avoided. I usually advise my patients to be in bed by 10 p.m. Light reading before sleep is recommended, for it wil help a woman to drift into a good night's sleep.

Prenatal exercises (discussed in Chapter 3), are most helpful in inducing sleep and they should be performed at bed time.

CHAPTER VI.

POSSIBLE COMPLICATIONS AND THEIR PREVENTION

This chapter is not meant to frighten women, but to teach them the preventive measures which can be taken to avert complications, that can arise out of pregnancy. In view of their prevention, I have included only those subjects in which the patient can play a role.

1. ABORTION OR MISCARRIAGE

Definition:

Expulsion of the conceptus or foetus before six months (or twenty four weeks), of pregnancy.

Prevention General Consideration:

Excessive fatigue, lifting of heavy objects and tiresome journeys should be avoided. Marital relations may be undertaken, though less frequently, especially during the first three months of pregnancy ideally speaking there should be the abstinence between 8th and 14th week of pregnancy and in last 6 weeks of pregnancy. This advice is gently given to the patients because doctor is not wholly aware of the marital background. In fact some husbands can get very furious inwardly. The best thing is that the advice is given when both husband and wife are present, so that the husband's feeling of "conspiracy" between the doctor and the woman is eliminated.

The early conceptus is not able to hold on to the wall of the womb, but at about three months of pregnancy, the anchoring to the womb is secured, and chances of its separation from the womb are reduced.

TYPES OF ABORTIONS

1. Threatened Abortion:

As the name applies, there is a slight vaginal bleeding, and if treatment is not taken in time, and the above-mentioned precautions are not undertaken, then the chances of incomplete and complete abortion are imminent.

Signs and Symptoms:

There is slight fresh bleeding from the vagina, or sometimes spotting is noticed, which becomes dark brown in later days. Pain in the lower abdomen is minimum, and easily tolerated by the women.

Conservative Treatment:

Complete bed rest is required, with some mild sedation like Phenobarbitone grain half of which is taken three times a day. Opinion of the doctors differ with regard to the treatment. it surely depends upon the discretion of your attending doctor. Internal examination is not advisable, in case it pro--motes further bleeding. However, if the condition persists for more than a week, an internal examination is carried out to assess the condition of the neck of the womb. (To see whether it is closed or open.) A gentle Speculum examination (see glossary) is also made under good light to exclude any local bleeding ulcer on the neck of the womb.

If the neck of the womb is closed, and pregnancy test remains positive, then Allylestranol (Gestanin) has been

found very useful in continuing the pregnancy. This is a synthetic progestational hormone and it aids the growth of the conceptus in a normal manner.

2. Habitual abortion:

This means a woman has had a misfortune of abortions on more than three occasions in succession.

Causes and Prevention:

Either there is some defect in the womb, or there is some aberration in the ova or sperm. This subject is very vast, and the best thing would be to consult a doctor.

Other cause of habitual abortion is the presence of a Patulous, or a loose neck of the womb, whereby the conceptus slips out of the womb without causing much pain or bleeding. In these cases an excellent procedure called Shirodker's operation is carried out. The patulous neck of the womb is closed by tightening it with mersilk, or nylon material. It should be emphasized that this procedure does not harm the growing baby or the mother. The stitch is taken out when the term approaches. A further explanation of this operation is given by the doctor. The results of this operation are excellent, and will help the vast majority of women who have the misfortune of repeated abortions, on account of incompetent internal neck of the womb.

Very important blood tests are taken by the attending doctor. They are done to exclude the possibility of diabetes and syphilis. Other investigations for habitual abortions are many and varied. An important one is as follows:

Hormonal deficiency can cause repeated abortions in the form of "missed abortion" when the baby stops growing inside the womb.

Serial examinations of the vaginal smears are taken in order to assess the amount of two types of hormones, which are necessary to maintain the growth of the baby. These hormones are called Progestogen and Oestrogen. Their critical value is of prime importance in the maintenance of the conceptus. This is tedious and a little expensive, but your doctor will be able to arrange these without difficulty. The deficiency of one type of hormone, Progestogen can be assessed easily with these methods. If there is a proven deficiency. then administration of Synthetic Progestogen in the form of injections or tablets are very helpful.

PAIN IN THE LOWER ABDOMEN

1. Urinary tract infection:

This is the most common condition during pregnancy, and can occur at any stage of gestation.

Causes:

During pregnancy, the hormone Progestogen, has a relaxing effect on the ureters (or the tubes that bring urine from the kidneys to the bladder. (The muscles of the ureters become sluggish, and the flow of urine may become stagnant. This predisposes to stagnation of the urine in the kidneys, and the urinary bladder thus causing infection.

Signs and Symptoms:

There is an increased frequency and pain while passing urine. Burning of the urine is noted by some women. If the infection is severe, the body temperature is raised to about 100 °F. or above, and is accompanied by vomiting. Lower abdominal pain may be mild or moderate. If it occurs in the later part of pregnancy, it can be mistaken for the onset

of labour but on examination by the doctor the differentiation between urinary tract infection and labour is obvious.

Treatment:

The doctor will have the urine examined for presence of pus cells and germs, and a culture is made. Appropriate antibiotics, especially meant for urinary tract infection are given. The best and safest in my opinion, is a course of Ampicillin (Penbritin) along with vitamin B-complex.

Fluids are given in large amounts to flush out the bladder and the kidneys. Pain killing drugs such as Baralgin (Metamizole) may be taken. Bed rest is important, and intravenous fluids are given. These fluids prevent dehydration and optimal maintenance of urinary output is established.

There is nothing to worry about, because with timely treatment the woman will feel better even in the course of a single day. The full course of treatment must be given.

Prevention:

Prevention of urinary tract infection is not so easy. However, plenty of fluids should be taken to avoid the concentration of urine. Also the woman should not allow the bladder to be overfilled on account of laziness, by not going to the toilet.

She should also wash herself every time she urinates in the fashion described below:

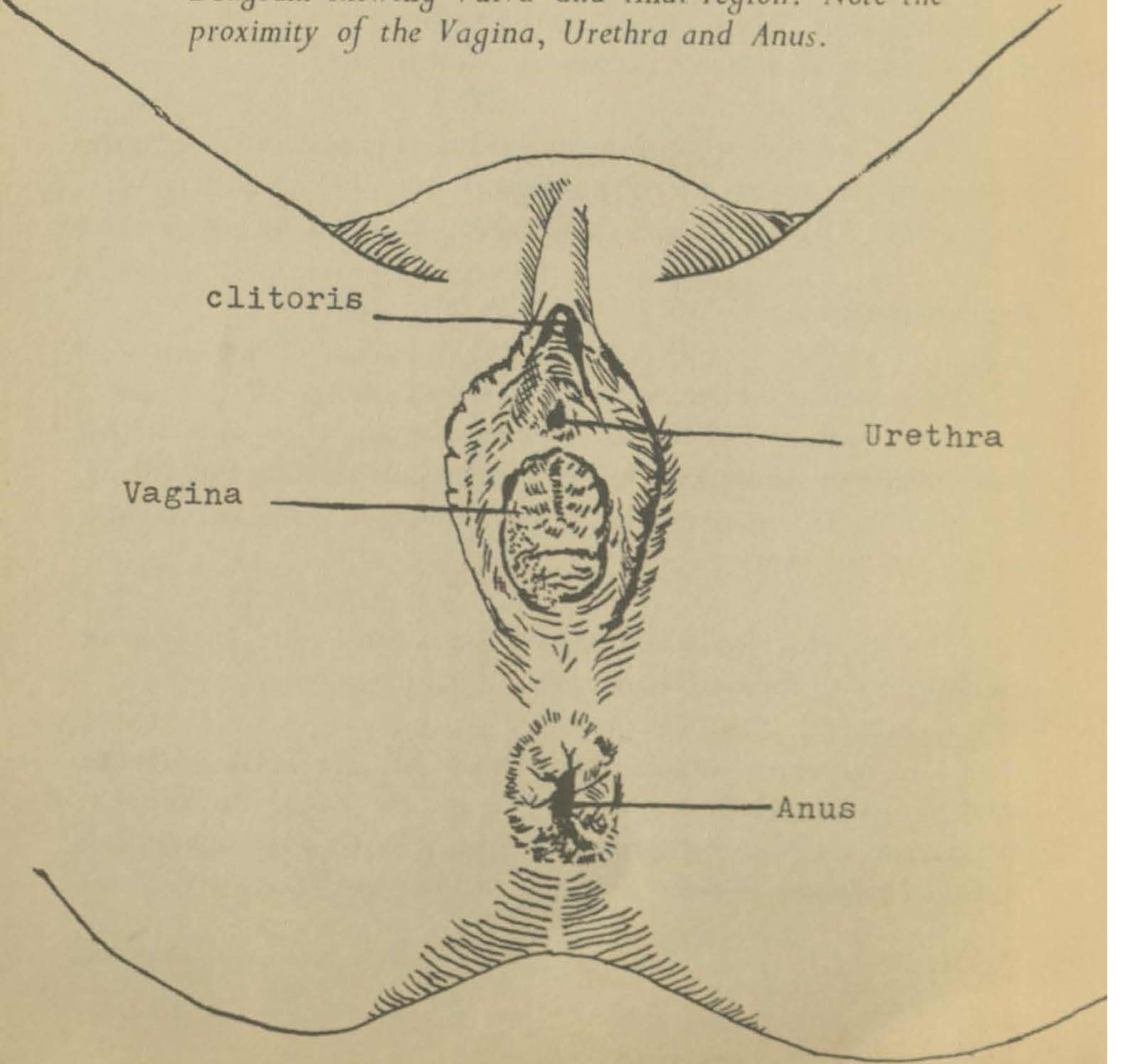
The water is poured from the pubic area. The vulva is washed first, and then the anal area. It should be kept in mind that the fingers during washing both the uro-genital and anal region, will introduce germs into the vagina. If the

fingers are brought upwards from the anal region to the vulva, then infection will certainly enter the vagina. Remember that the anal region is swarming with germs, especially E. Coli, which is the most common source of infection.

Therefor a proper washing of the vulva is extremely important, and should be carried out as follows:

A) First the vulva is washed.
B) Then the anal region is washed.
C) The vulva should not be touched after the anal region is washed.

Diagram showing Vulva and Anal region. Note the proximity of the Vagina, Urethra and Anus.



Other causes of pain in the lower abdomen:

A feeling of stretching in the lower abdomen, is due to the stretching of the ligaments of the womb, while the uterus is growing. This is normal, and in these cases, a urine examination reveals nothing abnormal. There is no temperature, nor is there any vomiting. If the pain persists, the doctor's advice must be sought, who will rule out other possibili ties, which are beyond the scope of this book.

Vaginal infections:

This is a vast subject, and only the most common causes will be described.

As has already been discussed in Chapter 2, there are increased vaginal secretions, which may be taken by the patient to be serious. A woman must remember that a discharge that does not itch, is not profuse enough to use a sanitary towel, is not offensive, or greenish-yellow, and which does not cause pain while passing urine, is no cause for alarm. On the other hand, if the discharge does itch, is greenish-yellow, and profuse, then the doctor's advice must be sought.

COMMON INFECTIONS ARE AS FOLLOWS

Thrush and Trichomonal Infection:

During pregnancy, the secretions of the vagina become more alkaline, and make a suitable media for the growth of the germs. Prevention of infections, described in previous paragraphs, will be of help in averting such infestations.

Thrush is an infestation caused by a fungus called Candida. The signs are as follows:

There is a white curdy material in the vagina, and severe itching is a prominent symptom. Due to the scratching, the area becomes red and swollen, and sometimes cracks appear.

The treatment is simple but prolonged. The doctor will take a swab and send for a culture; because usually the infection is that of a mixed variety, having trichomonal germs and pus cells, and E. Coli.

Vaginal tablets or pesseries prescribed by the doctor are usually Pimafucin or Mycostatin. The patient inserts them (one or two tablets) in the vagina at bed time, the doctor cleans out vagina with cetavalen swab the next morning. Sporostacine cream, Betnovet or Gentian Violet cream are applied during the day time.

Itching stops in a day or two, although the treatment is carried out for ten days. During this period intercourse must be avoided.

Cleanliness cannot be stressed more. In intractable cases, oral treatment is also given along with the local treatment. This, however will depend on its severity and the doctor's discretion.

Excessive weight gain:

This is the most common disorder but it is preventable. As has been mentioned before, total weight gain throughout pregnancy should not exceed twenty-one to twenty-eight pounds. What is more important is that some patients gain nine to ten pounds more, than what should be the gain, even in two weeks' time.

In these cases either the woman is over-eating, or there is an accumulation of water in the body tissues. In the latter

case there will be a swelling of the face, hands and feet. Finger rings become tight. If the swelling is present in the morning, on getting up from the bed, the implications are far more serious. Mild swelling of the feet by the end of the day is understandable, especially if the woman is standing or sitting most of the day.

In these cases, there is a danger of getting high-blood pressure, which leads to a condition called Pre-eclemptic Toxaemia. Its complications are numerous, but I will only stress on the women to keep their weight down by following a proper diet. In cases of excessive weight gain due to odema, the doctor prescribes medicines like Lasix or Aprinox to get rid of extra water in the body tissues.

If the woman is already obese, there are all the more reasons that she should keep her weight down, in order to avoid complications. Sometimes there is compulsive eating on account of frustration and tension. The underlying cause must be sought, and appropriate treatment must be given in time.

On many occasions, the woman has a notion to eat more, so that her new born baby is more healthy. But in fact nothing can be more cruel for the baby. The attending doctor also finds difficulty in delivering the baby, besides this it is extremely dangerous for the woman herself.

Once she becomes obese, her muscular tone of the abdominal muscles is reduced. She will never be able to regain her pre-pregnancy weight. It is, therefore, vital that proper diet be taken to remain fit and not fat.

Infectious diseases:

In this connection, only those conditions are mentioned which may be the cause of alarm for the woman, and cause

defects in the growth of the baby. Prevention from these kinds of diseases is of prime importance.

Rubella or German Measles:

The virus (or germ,) passes through the maternal blood into the circulation of the growing baby, and causes certain congenital abnormalities. It is important to remember that it is the first 3-4 months of pregnancy, during which if the pregnant woman has been in contact with a patient of Rubella, or has suffered herself, is the cause of concern worthwhile. After four months of gestation, the woman should not be apprehensive, because the whole body (or the embryogenesis) is complete by this time. The attending physician can easily differentiate between German measles and ordinary measles.

Prevention:

If the woman has had rubella in childhood, then enough immunity is present in the body to combat the virus, and the baby may not be affected. During the first trimester of pregnancy, over-crowding, bus travelling, and cinema houses should be avoided, for the virus can be contracted unknowingly from such gatherings.

If the pregnant woman is exposed to rubella herself and shows clinical menefestation of the disease during the first trimester of pregnancy, the question of therapeutic abortion arises. The blood of the woman can be examined for antibodies. A rising value (titre) in the specimen, at an interval of ten to fourteen days indicates infection. It is some times worth trying in giving an injection of Gamma Globulin in a single dose of 750-1000 mg. to procure passive immunity in women, who are known to have been exposed to rubella in the first trimester. It reduces the risk to the baby, but does not provide

full protection. In my opinion therapeutic abortion is a safer procedure, than to have possibility of a handicapped child, because inspite of administrating Gamma Globulin to the woman—She suffers undue mental torture for full twenty weeks and in a number of cases spontaneous abortions occur on account of tension alone. However, if the pregnancy is very precious, it might be considered that risk of having a handicapped child is worthwhile. The parents may make this decision themselves, it is almost like gambling.

Measles:

It is generally agreed upon, that ordinary measles do not cause foetal mal-development, and it is improbable that measles affect the normal development of the baby in any way.

However, if the baby is born at the height of infection, e.g., rash and temperature, the new born baby may develop rash during the first two weeks of its life. High fever may cause miscarriage or premature delivery.

Prevention:

It is just like the prevention of rubella, or German measles, except that the Gamma Globulin injection seems to be of no value.

Mumps:

Maternal mumps seem to have no ill-effects on the growing baby, but a high temperature can cause miscarriage or premature delivery.

Chicken Pox:

Infection with chickenpox may affect the baby at birth. No abnormalities, like those in German measles are reported,

in any medical literature. The baby might have chickenpox like rash at birth, or within ten days of birth.

Prevention

Same as has been discussed earlier for the prevention of measles, mumps, etc.

Small Pox:

Maternal smallpox in early pregnancy may cause abortion. In later months of pregnancy, if smallpox does result, the child may be born with typical lesions or spots (fresh postules.)

Even vaccinated women must protect themselves from small-pox patients. A primary vaccination must be avoided, during the first trimester of pregnancy, except when there is an outbreak of this disease, or when receiving inocculation for travelling, or when the pregnant mother has been exposed to the disease.

General considerations:

Anti-bodies developed by the mother against the majority of viral infections are sufficient for respective diseases. These anti-bodies circulate in the blood of the woman. Thus they pass through maternal blood into the circulation of the growing baby and give it resistance for that particular disease. This will happen when the woman has had the disease herself, or if she has received vaccinations.

OTHER INFECTIONS

Malaria:

A high temperature in malaria may cause abortion, or if in later pregnancy, may bring about premature labour.

Prevention:

It is important for the woman to have prophylactic anti-malarial drugs (300 mg. of chloroquin base,) once a week, or 25 mg. of (daraprim.) This is good for women from non-malarial countries. If there is active infection, the doctor's advice must be sought, who will give a full course of anti-malarial drugs.

Vaccination for air travel:

It is often asked by patients whether they can have vaccinations against smallpox, cholera, typhoid, and yellow fever. Smallpox vaccination has been considered in the earlier paragraphs. It is safe to have cholera and typhoid (T.A.B.) inoculation, for this seems to have no ill effects on the baby or the mother. But it is important to avoid yellow fever vaccine during the first trimester of pregnancy, unless the immigration authorities are adamant about it.

CHAPTER VII.

THE EFFECTS OF DRUGS AND X-RAYS ON THE BABY

Drugs:

All drugs which are taken by the pregnant woman circulate in her blood stream, and enter her tissue fluids. They can thus effect the developing baby. Drugs whose concentration in the blood of the mother is low, are usually not sufficient enough to harm the growing baby. It is extremely important, however, that every pregnant woman must bear in mind, that most drugs used by her will reach the baby, no matter what. This has been stressed, because many women take various drugs without the prescription of the doctor, and without being aware of the proper dosage.

Those drugs prescribed by the doctor, can be taken safely, because the doctor keeps in mind the particular stage of pregnancy the woman is in, before she prescribes any medicine. A careful record should be kept of all drugs taken during pregnancy. It will aid the doctors in diagnosing and treating the baby, in case they show any adverse effect at the time of birth. Most medications must be avoided during the first three or four months of pregnancy, unless the doctor prescribes otherwise.

Aspirin:

Aspirin not only affects the stomach lining of the woman, but also crosses the placenta, and causes the baby to

have jaundice at the time of birth. Instead of this drug (which is usually taken for headache, toothache and influenza), I usually prescribe Dipyron (Novalgin) which is as effective and probably not harmful.

Nicotine:

Nicotine is present in tobacco, the effects of which have been described in Chapter 4.

Metronidazole:

Tablets of (Flagyl) Phenothiazines (Phenergan) etc. have not been found unsafe during pregnancy.

Sulphonamides:

These drugs cause jaundice in the new born baby, and therefore should be avoided during pregnancy.

Antibiotics:

Tetracyclines and the allied types, must not be taken at any stage of pregnancy, because the baby's teeth will be stained with the deposits of Tetracycline in combination with orthophosphates. The discolouration of the teeth of the baby will be permanent.

Novobiocin:

This drug if administered in the later months of pregnancy, may cause jaundice in the premature infants. Of all the antibiotics, I prefer Ampicillin, which is effective against all those bacteria, against which the other antibiotics also act.

EFFECTS OF X-RAYS ON THE MOTHER AND BABY:

The risk of having an X-ray taken during pregnancy, have been over-emphasised and misinterpreted. In my view the advantages gained for diagnostic purposes, outweigh the possible harmful effects on the mother and her foetus. It is definitely safer to have an X-ray taken than to delay this important procedure, and increase the possible dangers.

However sometimes the X-ray of the abdomen and pelvis is quite unnecessary, if a proper clinical assessment is carried out by the attending doctor.

X-rays taken to investigate urinary tract infection, should be delayed until the baby is delivered. In the investigations of kidney, bladder etc., a series of X-rays are essential. But they undoubtedly increase the risk to the gonads (see glossary) of both the mother and the baby. The harmful effects are as follows:

1. The gonads of both the mother and the baby get irradiated, which may lead to genetic defects in the potential parents.

2. There is an increased risk of leukeamia (blood cancer) in the baby.

Indications:

1. The indications for the need of an X-ray in obstetrics, commonly arises to assess pelvic capacity and the size of the baby. In this case a lateral view for the measurements of the pelvic bones, and the size of the head of the baby, and its position, are most valuable.

2. In unfortunate cases, where a doubt exists of a deformed or dead child (intra-uterine death) an X-ray is needed to confirm the diagnosis.

3. An X-ray may be taken for the conformation of multiple pregnancy (that is the presence of twins, triplets etc.)

4. In some cases, an X-ray of the chest is needed, such as chronic bronchitis, tuberculosis, and cases of asthma. In undertaking this procedure, the radiologist must shield the abdomen, with special materials, so that the rays do not penetrate the pelvis of the mother and the baby.

5. A baby is presenting in a position other than the head, that is by a breach (see glossary) or shoulder presentation, an X-ray may be taken to avoid unforseen situation arising on account of these presentations.

General considerations:

In my experience, a definite indication as has already been described, must be present in order to necessitate the taking of an X-ray. The patient should be made to understand the merits and demerits of having one taken. Once again, it is emphasised that undue apprehension is not necessary when the doctor orders an X-ray. There is no need to take a second or third opinion, as has been noticed in my practice. Remember that the attending doctor is very concerned for both the mother and the baby.

CHAPTER VIII

THE ONSET OF LABOUR

A woman who has been prepared well both mentally and physically during her antenatal period, will enter the stages of labour without apprehension. She will know that nature has provided her with such modes and means of delivery of the child, that the head of a baby, measuring roughly about the size of a grape fruit (circumference 13 cms.) will come out of her birth canal. The muscles of the birth canal and perineal region will automatically stretch out.

Most of the attending doctors and nurses have heard the patients scream, moan and groan, and a familiar sentence of their's is, "I am going to die, doctor! Please do something!". Well, my dear readers, if every woman was going to die during labour, we would not have had to deal with the population explosion.

Keep calm and relaxed, and depend on your doctor who has a great responsibility. She is answerable to both mother and child. We ask the Almighty's help, along with the modern methods of relieving the pain and discomfort of labour. You will get your little baby out from-your-womb, however it will take some time.

The Onset of Labour:

After having attended the antenatal clinics and learning basic facts about the delivery, the time has come for actual labour. (Uterine contractions).

Differentiation between False and True Labour:

False Labour: As the woman approaches full term, she has a feeling of stretching in the lower abdomen. There will be pain in the legs and small of the back accompanied by hardening of the womb. These contractions are neither strong nor regular. Usually the patient arrives at the hospital with all her baggage, ready to deliver, but the doctor examining her, will find the neck of the womb closed. There will be no vaginal discharge in the form of 'show' (described later). An enema is given and the pain and discomfort disappears. These feelings are due to the descent of the baby's head into the pelvis and is certainly not a sign of true labour.

Onset of True Labour: The first sign a woman notices is the 'show'. This consists of a blood stained discharge from the vagina accompanied by regular rhythmic contractions starting from the small of the back and embracing the whole abdomen. Sometimes the first sign is leakage of water (liquor amnii). The women should not get worried about this, because doctor will do best for the patient. Uterine contraction start within couple of hours.

To begin with, the contractions last for half a minute or so and they come after every 20 to 30 minutes. There is a frequency of urination and a peculiar feeling of apprehension. This is the first stage of labour, and the time factor depend on how well a woman has been trained in psycho-prophylaxis. She should be encouraged to walk around rather than lie down. The first stage of labour usually lasts from 8 to 24 hours in the first baby, and 4 to 6 hours in subsequent deliveries. An enema is given, and the area is shaved properly. A pelvic examination under sterile conditions, in the first stage of labour, will reveal the neck of womb to be 1 to 2 fingers (cms.) dilated. The baby's head is well down in

the pelvic cavity. During contractions, the woman should follow the breathing excercises and blowing of the abdomen, as described in Chapter 3.

As the labour progresses, the contraction increases in intensity and the interval is decreased. This is the stage when pain relieving drugs such as Pathidine, and Buscopan (Hyoscine Hydrobromide) can be given. The bladder must be kept empty by voiding frequently.

This is also a vital time for the husband. If well-trained beforehand, he can share her discomfort by holding her hand affectionately. The nurses and doctors have a very important role to play at this time and that is to reassure the patient.

Gradually, as the head descends, the bag of water begins to protrude and the neck of the womb opens further. At this juncture an artificial rupture of membrane may be done. The procedure enhances labour and shortens time of delivery. Also—colour of liquor, (liquor amnii) is noted for the presence or absence of meconieum. If the water is greenish, the doctor usually starts the administration of oxygen. There is no need to fear the mask on the face. The patient should trust the discretion of the doctor at this juncture.

Second Stage of Labour:

By now, the uterine contractions come every one to two minutes and last for one minute. The neck of the womb is now fully dilated and there is a strong urge to push down. Usually the bag of water spontaneously ruptures, if not already ruptured by the doctor. The woman is transferred to the labour room and to allay the fear and pain, a mixture of 50% Oxygen and 50% nitrous oxide (Entenox) is administered through a rubber mask.

The usual mode of delivery is by placing the legs apart, supported by two poles with leggings on either side of the labour table. This is called lithotomy position. The exercises described in Chapter 3 will help the patient to maintain the position without discomfort. The patient may have already been conditioned to push in the proper manner, and therefore, difficulty in the delivery will be minimal. As the head comes out, the nurse gives an injection to the mother to facilitate the third stage of labour. The second stage lasts from 1 to 2 hours in the first baby, and from half to a few minutes in subsequent ones. Many women are keen to know about the little cut (episotomy) which is made painless by local anaesthesia. The whole series of the process of labour have been fully illustrated, which may be referred to (page)

A beautiful baby is born, lustily crying. The umbilical cord is clamped at two places and cut. The precious baby, whom I always call 'little angel' is ready to cope with the world as an individual. Further care of the new born is described in Chapter 9.

Third Stage of Labour:

The patient is kept in the same position after delivery. The injection which was given at the second stage of labour's termination, will facilitate the detachment of the placenta from the womb. The placenta comes to lie in the vagina from where it is expelled by the help of the doctor.

Sequence of labour:

From figures one to seven gradual descent of the baby is occurring. Various modes of engagement of the head in relation to the pelvis result in the complete expulsion of the baby.

Medical terms have been deliberately omitted in order to avoid confusion.

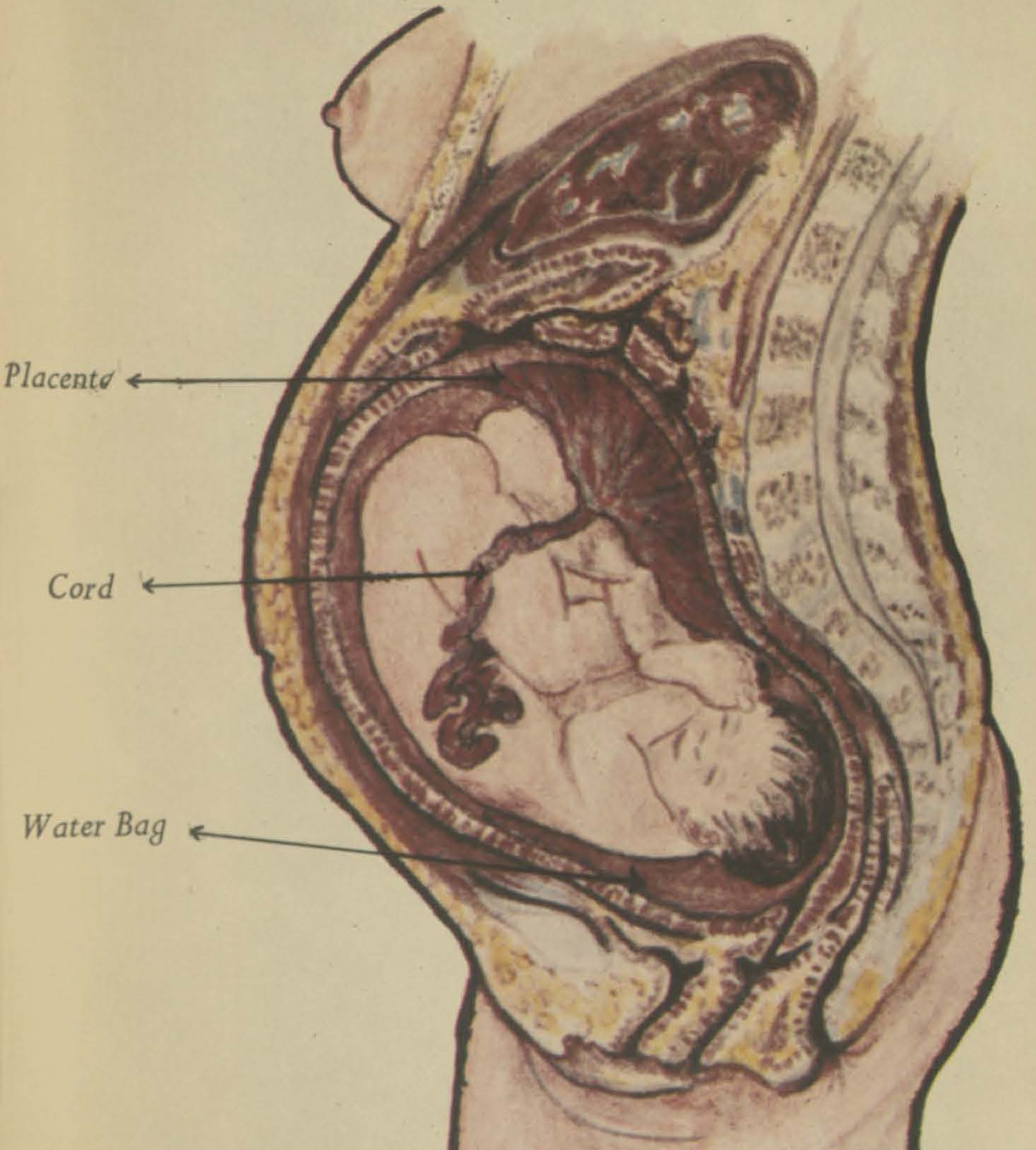


Fig. 1. FULL TERM PREGNANCY.
Showing baby in the Uterus.



Descent is occurring throughout.



Further descent.



Internal rotation of the head.



Extension of the head and crowning.



Internal rotation of the shoulders.



Delivery of the head.



Further sequence of delivering the head and rest of the body.

The Post Partum Period:

This is also called the 'lying in' period whereby the patient is kept under strict surveillance by the doctor. This period lasts for 6 or 7 days. It is a time for re-adjustment for the mother, father and baby. The height of the womb is checked by the doctor and the amount of vaginal bleeding is noted. The state of the episotomy is checked to see that a thorough perineal care is given by the nurse. This also includes heat (infra-red rays) to the stitched area. These days, the suture used is absorbable and is not to be taken out. The vaginal discharges gradually decrease and become brownish (called Lochia). They disappear within 30 to 40 days. Post-natal exercises are started on the second day following the delivery. Please refer for full illustrations in Chapter 10.

In our country, there is a tendency for the woman to be fed on very rich materials, such as 'kamarkas' which is made

up of butter ghee, dry fruits, etc. This is not only unpalatable in my view, but also dangerous to the mother, because once she begins to gain weight, it will be difficult to reduce.

Rooming-in of the Baby:

It is important for the mother and her baby to have a period of rest and recuperation after delivery. The duration of this period varies with individual cases, which may range from 12 to 24 hours. The relative merit of keeping the infant by the side of mother, or putting him in the nursery depends on the wishes of the mother. The constant close presence of the baby enables the mother to sense his needs and wishes. Even in large hospitals, which are equipped with sophisticated nurseries, the practice of rooming-in of the baby is becoming more popular. By virtue of this, sticky eyes, cord infection and cross infection is prevented.

Breast Feeding:

Breast feeding is natural and best for your baby. Lactation is influenced by emotions and the so-called 'psychology of breast feeding' is an important subject in itself.

Breasts which have been well prepared during the ante-natal period, will perform better for the interest of the baby. Many modern women hesitate to breast feed, because they have the wrong notion that their breasts will become mis-shapen. This is not true. In fact it is difficult to control the flow of milk once it begins to pour.

The current trend of women to refuse to breast feed their babies is not only annoying to the doctor, but it deprives the new born of a great blessing endowed by nature as their birth right.

The old argument used in advocating breast milk has less force now than previously. This is because most companies have brought forward formulae of cow's milk, which being dried, evaporated and prepared in such a way that the constituents are nearly as good as mother's milk. These formulas are safe, but this cannot be said for fresh, liquid, cow's milk. Firstly, in the latter, the possibility of adulteration cannot be ruled out. Secondly, the cows are not properly tuberculin tested. And thirdly; "milk allergy" is far more common in cow's fresh milk than in formulae. ("milk allergy" is discussed in later paragraphs).

Going back to the discussion of breast feeding, the most valid argument in its favour is its relation to psychological benefits. The breast and mouth relation between mother and baby is important to both. Psychiatrists suggest that the satisfaction which they experience is vital in reducing incidents of depression in later life.

In under-developed countries, breast feeding offers the only chance of survival to millions of babies, because they cannot be supplied with adequate artificial milk.

Breast feeding is usually recommended for 3—6 months and is supplemented with the formulas discussed in later paragraphs.

However in some circumstances, specially when the mother is a working woman, the right to choose between breast and bottle feeding is understandable, suiting her convenience. Others must try to experience breast feeding, not only because it enhances the physical growth of the baby, but also affects it psychologically (discussed in later chapters). Breast feeding has the following advantages:

i) It is handy. Only the nipples have to be cleansed properly with warm water (which has been boiled) and cotton each time the baby feeds.

ii) No formula, such as powdered baby milk can completely match the milk of the mother.

iii) Risk of infection such as diarrhœa is minimum.

iv) Flow of milk in the first week is very rich in proteins and antibodies essential to the baby. Many women will notice that the milk in the beginning is yellow and thick (colostrum). Later it becomes white.

v) Risk of engorgement and subsequent possibilities of the formation of breast abscess is eliminated if proper breast feeding is carried out.

vi) Breast feeding enhances the reduction in size of the womb (involution). This is due to the effect of sucking on the nipple and many a woman will notice that there is a discomfort in the womb (lower abdomen) during feeding of the baby.

vii) Mother's milk cost nothing except milk and vegetables are taken in large amounts to replenish the calcium contents.

Procedure:

Before putting the baby to breast or bottle feeding, it should first be fed on glucose saline $\frac{1}{2}$ per cent and should be given in 1-2 ounces according to the size of the infant. If this is swallowed normally and retained, breast feeding can be started 8 to 12 hours after delivery, even though a small amount may come. In the beginning, 5 minutes on each breast is recommended at intervals of 3-4 hours.

Correct method to breast feed is to place the thumb and index and middle finger above and below the nipple respectively, gently pressing the breast and keeping the nipple away from the infant's nose to ensure unimpeded breathing. See photograph on page 77.

For some babies, breast feeding is not enough for the first two-three days, therefore his feeds are supplemented by artificial ones. The choice of milk depends on the experience of each doctor. The amount and method of preparation is given on each tin and the milk is prepared by the nurse. and well tolerated by the new borns.

A good habit, is to give the last feed somewhere near midnight, and the first at six a.m. in the morning. This will ensure a good sleep for the mother, as the baby will not disturb her unduly.

Feeds on Demand:

I personally like this method very much. The new born baby knows his or her requirements. The baby will show his hunger by trying to suck every thing that is near his mouth, especially his own fingers. Crying is another way of showing his hunger.

Prevention of Cracks and Engorgment:

The breast must be kept relatively empty. If the milk is allowed to accumulate, engorgment results, and the baby is unable to suck milk, and thus further engorgment results. The cracks appear when he tries to suck hard with all his effort to secure milk, injuring the nipple.

Treatment:

A four-hourly feed method or feed on demand, will prevent engorgment. Otherwise express extra milk and keep the breasts soft. Pumps are available for this purpose. Manual expression can be carried out by the nurse. For hard and lumpy breasts the doctor may give a short course of tablets in order to soften the breasts. (Stilboesterol).

An age-old method of relieving the pain and engorgment is to keep a hot water bottle over the breasts. I have, however, found that a cold water bottle is better. It takes away the pain and heat of the breasts far more quickly and prevents abscess formation.

Cracked Nipple:

Many creams are available for cracked nipples. I recommend Messe cream for the prevention of cracked nipples. Giving the nipple a rest of 2-3 days and then using nipple shield for the purpose of sucking will help a lot. Sometimes the nipple is too large and does not fit properly in the small mouth of the baby. A nipple shield should then be used for feeding purposes.

Artificial Feeds

Formulae of milk

Those mothers who choose upon putting their babies on artificial feeds on account of valid circumstances are most welcome to choose formulae. In my experience and opinion the most satisfactory formula is SIMILAC (by Abbott). It is available in two types of coloured tins. The green one is without iron, and the yellow one contains iron. I have found that the majority of newborn babies tolerate SIMILAC with iron from the onset. The underlying principle of adding iron (12 mg. of Ferrous sulphate/litre is supplied in standard formulae) to the formula is that, iron stores at birth may satisfy body requirements for only two months in premature babies and only 4 to 6 months in term infants. Hence a high intake of iron in the diet is essential to maintain iron balance for the first eighteen months of life. It has been generally agreed that iron intake from 1.0 to 1.5 mg./kg. of body weight will maintain the iron balance consistently.

Similac with iron is readily absorbed and provides a significant prophylactic protection against later anaemia, colds and other respiratory infections. 'Milk allergy' discussed later is extremely rare with Similac because it is 'heat-denatured milk and has lost most of its allergincity.

The method of preparation and amount of milk given at each feed is provided in the form of directions on every tin. It is vital to boil the bottle and nipple before each feed. Sometimes it has been noticed that the hole in the nipple is either too large or too small, in either case the baby begins to cry and moves his head from side to side. It must be noted by the mother that milk flow is in the form of drip, that is, drop by drop.

The formula must never be given too warm or too cold. The other important factor in successful bottle feeding is the angle at which the bottle is introduced into the baby's mouth. If it is kept horizontal to the mouth, a lot of air enters the stomach which later causes gripes. The best thing to do is to tilt the bottle a little towards the baby's mouth to ensure a constant flow of milk.

Milk allergy

Although the incidence of milk allergy caused by cows milk is low—this fact has its own importance.

The allergic manifestations appear in the form of gastro-intestinal symptoms such as vomiting, diarrhoea or skin 'eczema' type of rash or in the form of a non-specific running nose.

This subject is too intricate and the common reader will find it uninteresting. The simple way to explain it is that certain antigen antibody reactions occur to the protein content of the cow's milk. In various milk formulae it has

been mentioned before the milk is dried and denatured, the specific allergons are removed to a great extent.

Nevertheless to be on the safe side a substitute for milk formula for those who cannot tolerate powdered milk is present in the market, which is derived from soya beans. The preparation is called 'SOBEE' made by Mead Johnson. This complete formula is as nourishing and as well tolerated by the newborns and infants as any formula of dried milk. The growth rate of he baby is as good. The 'Sobee' formula provides the almost taste and colour of milk in usual form, and the constituents of Sobee are very good for normal tissue formation. Your own doctor will be able to tell you more about milk allergy, and it is suggested that any change made for the form of feeds must be discussed with your doctor before embarking on various substitutes.



CHAPTER IX.

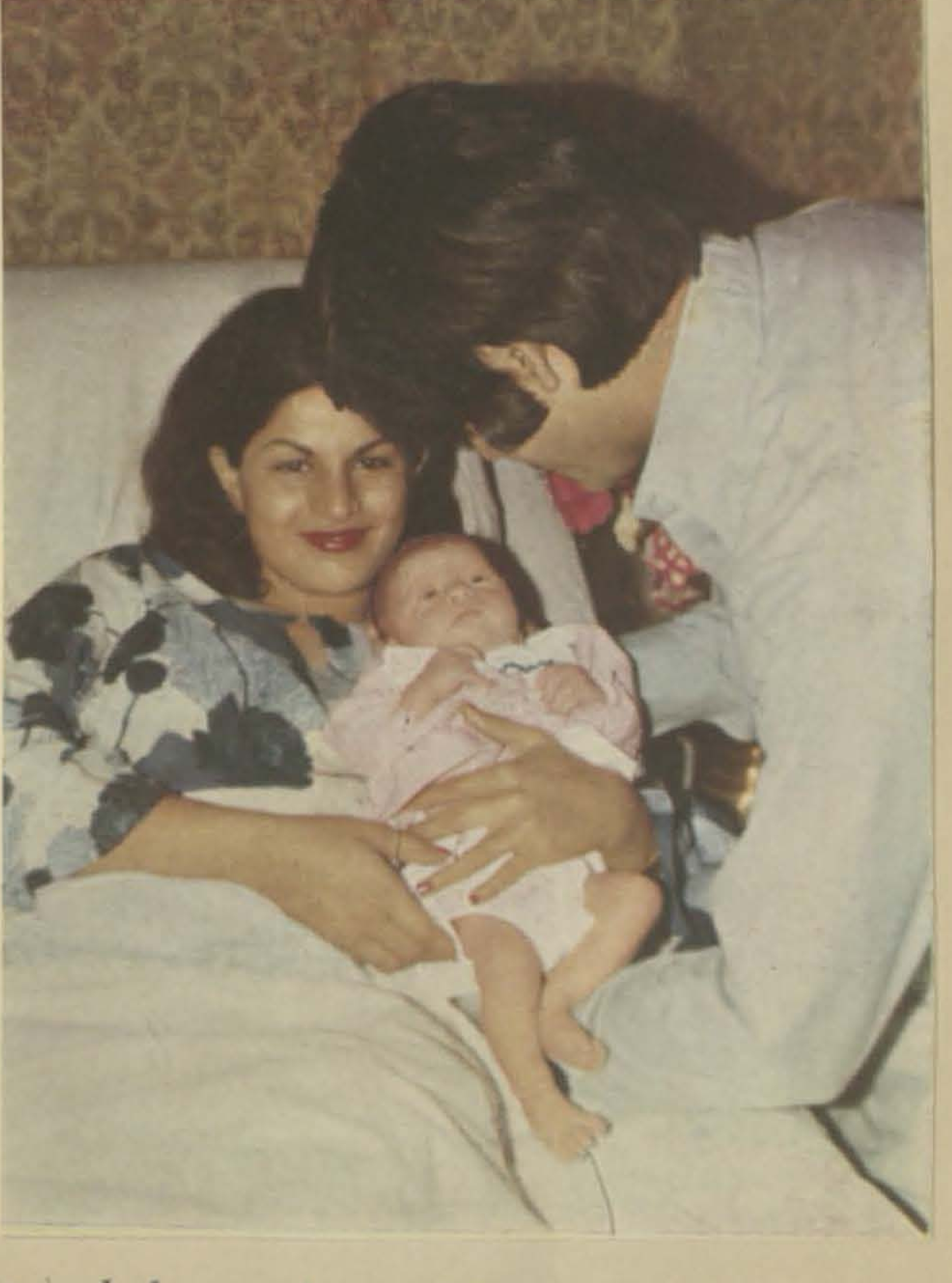
BABY CARE AND FURTHER DEVELOPMENT

A new born having lived for forty weeks in the darkness of its mother's womb, comes out into a 'lighted and noisy world'. The first thing that he does is to cry, and then when his eyes are cleansed, he begins to blink. I do not recommend putting drops of silver nitrate, or sulphonamides and penicillins into the baby's eyes. These can cause an inflamation of the conjunctiva in the eyes. A gentle daily cleansing with a cotton swab soaked in sterile water, is all that is necessary. The baby's limbs then begin to move more freely, while crying continues for some time. The umbilical cord, which is severed from the placenta, and tied at two places with a sterile



A fifteen minutes old newborn. Note the placenta with its cord.

thread, is left about one and a half inches in length. It is cleansed daily with methylated spirit, and no bandages or antibiotics are necessary for local application. The cord is left open, drying and falling off within five to six days. In certain cases, where the cord is thick, it takes eight to ten days to do so. When the cord falls off, it leaves behind a small button, now called the navel. The attending doctor will measure the circumference of the head of the baby, its length and a full physical examination is done. Weighing is a routine procedure and needs no comment.



Same baby six hours old. Note the joy of the parents.



Father's fear to handle the baby is usually eliminated if the "rooming in of the baby" is permitted.

Bathing and Oiling.

At the time of birth, baby is covered with a white creamy substance called Vernix. It is a protective covering and therefore it is generally agreed that cleansing with olive oil or any baby oil is better than immediate bathing, especially in winter. A bath may be given on the third or the fourth day. In summers, however, bath is given on the second day of delivery and a daily bath thereafter.

Baby lotion, if available, is applied, a vest and soft cotton frock is put on, and a soft cotton napkin is tied. The entire layette depends on the weather conditions. Baby woollens are different than those of adults. The usage of baby powders in the groin and axillary region and sometimes the entire abdomen is not very useful in my opinion. The powder mixes with urine, forms crusts, which is conducive to the organisms present in the faeces, which may result in Nappy Rash. This will also result if the napkin is not changed immediately specially if the stools are very acidic. After the napkin is removed please gently clean, the bottom, with cotton swabs soaked in luke-warm water and mild soap. This is useful to remove the stains of stools and I recommend this wholeheartedly. The mother must remember that in the case of a male child the end of the penis and underneath the scrotum no stools should be allowed to stick.

Care of the Breast Area.

It would be noticed that on the third or the fourth day in both male and female babies there is a mild swelling in and around the nipple area. On no account it should be manupulated or squeezed to remove what is called the 'Witches Milk'. It is left alone and the condition disappears in a few days. The above-mentioned condition is due to the presence of hormone Oestrogen circulating in the mother's blood, which has entered the circulation of the baby.

Sometimes there is slight bleeding from the vagina of the female baby. The reason is again the presence of Oestrogen hormone, and there is nothing to worry about, it disappears in a day or two.

Reasons for the baby's crying.

Many mothers and their relatives worry excessively when their babies cry. The reasons are very simple. Crying is the only method a baby can utilise to attract attention and this is wise on the part of the baby because obviously he can not speak out his demands. I jokingly tell my patients that the baby is crying because he is born in a Wicked World. However, the various reasons for crying are listed below:

1. The baby may be over or under fed.
2. The napkin may be wet.
3. Excessive gas in the stomach causing gripes.
4. Improper clothing and poor ventilation in the room.

If none of the above condition is applicable, a child specialist must be consulted.

Burping:

If the baby is left to cry too much between his feed, he may swallow air and this causes gripes. Therefore, after each feed the baby must be put tenderly on the shoulder and be gently rub on the back. This procedure will expel the gas from its stomach. Burping should be done after each feed. The baby will belch two or three times.

Sleeping:

For the first week, a normal healthy baby usually sleeps most of the time, except when he is fed or bathed. After

two weeks it will be noticed that waking hours are increased. He usually attracts attention by crying, and in most cases only lifting from the cot and gentle caresses are sufficient.

Stools:

During the first one or two days the stools are dark-green in colour and slimy in consistency (meconium,) but later they become yellow. Some mothers worry that the baby has not urinated since birth. It is a good idea to mention this to the attending doctor, who will explain that the baby urinated at the time when the cord was clamped and it may be noticed that the urine is mixed with the stool on the napkin.

The baby usually passes stool after each feed. It is more important for both mother and attending doctor to note the stool's consistency. In most cases it is semi-solid. If it is watery and greenish in colour and more than seven to eight stools are passed in twenty-four hours, a child specialist must be consulted. The baby usually grimaces if stools are constipated, in such cases extra water (one to two ounces), is advisable between feeds.

Normal Behaviour of the Baby during the First Week.

Mouth: Reflexes of swallowing and sucking are present at birth. He may sometimes gag, choke, or dribble, because of weakly co-ordinated reflexes. During this time the mother should not worry, but must immediately clean the mouth, and keep the baby's head down.

Eyes:

The baby blinks, stares aimlessly now and then, and for sometime he is unable to focus. Due to this, many mothers think that he is squinting, but this disappears in a few weeks.

Ears:

Noise may make the baby jerk, cry or turn his head. Although he is not able to make out one sound from another, he does respond to noise.

Nose:

The baby's nose is usually flat after birth, but normal shape is restored in a short time.

Skin:

The skin of the newborn is reddish during the first few days. It is very tender and scaling. There is a white creamy material in the armpit and groin.

Arms and Legs:

The hands are clenched, and the baby keeps his arms in front of the chest. His legs look bent during the first few days, after which they straighten out. However, a complete check is made of the hip-joints and feet by the doctor, so there is no cause for alarm.

Weight:

An average Eastern baby weighs about seven pounds. He loses weight in the first few days, regaining birth weight by the tenth day. There is a subsequent increase in weight at the rate of six ounces per week.

Physiological Jaundice. The baby shows a ting of lemon yellow colour mostly on the face and white of the eyes. If it is excessive it is Jaundice. Child Specialist is consulted. Normally, the Jaundice disappears in a few days.

The first six weeks:

Sneezing, choking and occasional hiccuping, as well as fitful waking may worry the mother. The baby repeatedly sneezes to cleanse his nose by reflex. These signs disappear as the reflexes of the nervous system develop.

During the first six weeks, muscular control is increased, and the baby is able to raise his head slightly. At this stage, his eye muscles are quite active, and he stares visibly when some sound like the closing of a door, or tinkling of the bell is made. During this time he makes small throaty noises.

Ten to Fourteen weeks (Two and a half months to three and a half months):

By this time, the baby enjoys having people around him. He makes cooing and babbling noises, and his response to external stimulli increase. (See photograph:)

It is important to droll over the baby in an affectionate manner to obtain maximum response.



The head is not steady, but it may jerk now and then. Responses to smiles and anger can be recognized, and the three and a half months' baby, will gaze at people intently. At this stage he focuses his eyes on brightly coloured objects, especially red, green and blue ones.

The baby automatically chooses his favourite position for sleeping and resting. Thrashing movements are common. If he is placed on his stomach, he raises his arms and legs. This position, is excellent for the development of the back and neck muscles.

Fourteen to Eighteen weeks. (Three and a half months to four and a half months):

By the fourteenth week, most babies laugh out loud, gurgle and bubble. They smile when looked upon. At this stage the baby can hold his neck better, and the movements of his arms are purposeful.

Eighteen to Twenty-two weeks (Four and a half months to five and a half months):

Now the baby will try to put everything into his mouth: Toys, clothing, blankets etc. Many babies begin to suck their thumbs and fingers at this stage. The baby can differentiate between familiar and unfamiliar figures, and 'talk to himself' when he is alone. The baby can now sit erect with support, and may appear to crawl.

From Twenty-two weeks to Thirty-two weeks. (Five and a half months to Eight months):

There is an increased evidence of energy and activity. The baby can crawl towards various objects, and is also able to transfer objects from one place to another. His interest in the world increases.

From thirty-eight to forty-two weeks. (Nine and a half months to ten and a half months):

The infant can now raise himself from sitting position, to that of standing with support. Some in fact may take a few steps with this support, and be able to move either forward or away from a person or object.

From forty-two to forty-six weeks (Ten and a half months to eleven and a half months):

This is the important time to learn the skills of walking and talking. The eleven month old baby may understand his mother's simple commands. Since he is able to crawl more freely, it is a good idea to protect him from electric cords, heaters, stairs etc. He will crawl where his curiosity leads him.

From forty-six to fifty-two weeks. (Eleven and a half months to one year):

Walking ability varies widely with individuals. Independent walking begins usually after one year. At this stage he attempts to feed himself and may be able to throw a ball etc. He may also try to help you in dressing him, for instance, pushing his foot into his shoe.

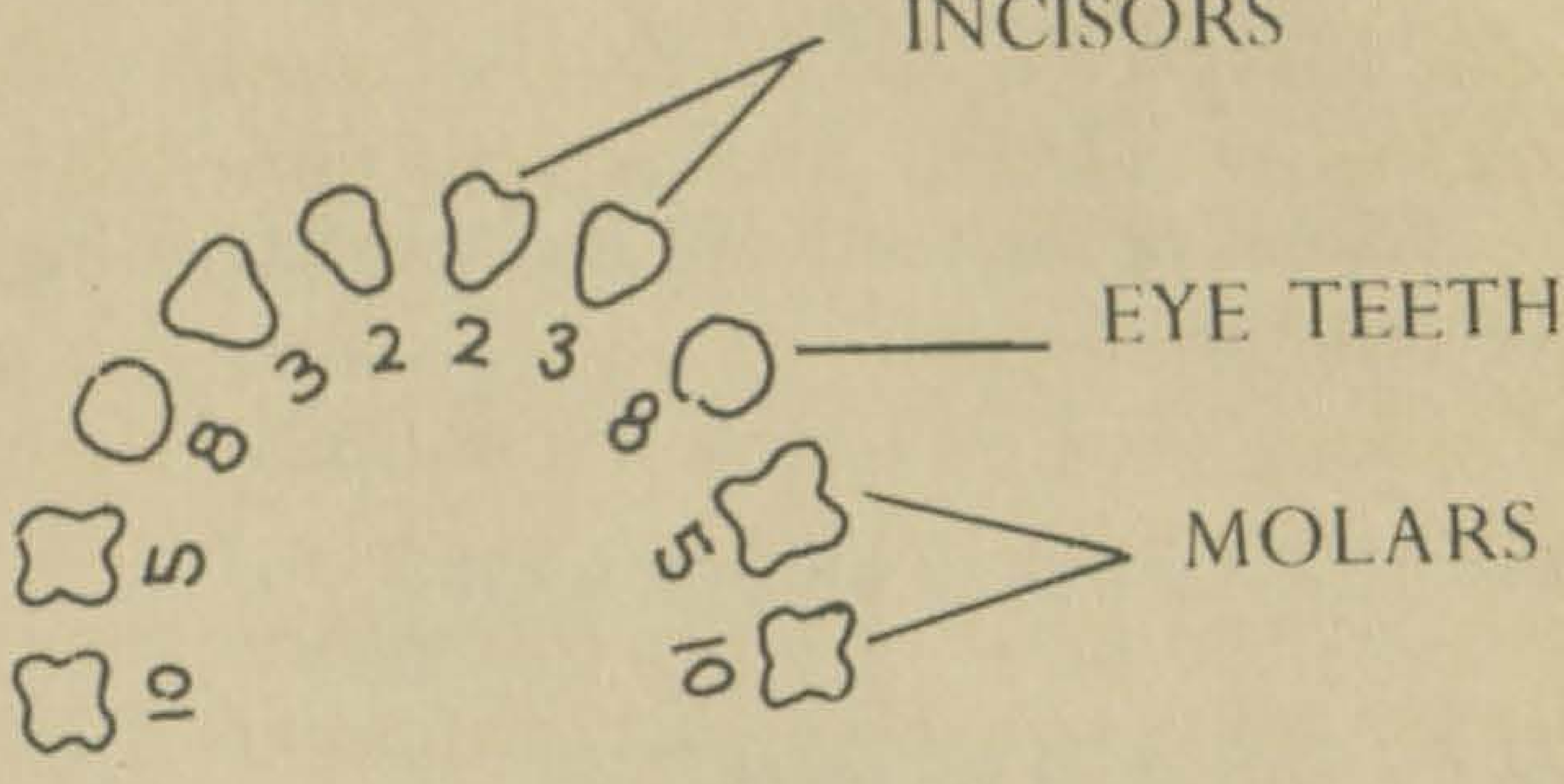
At one year the infant is more self-confident. He is aware of anger, jealousy, and fear in others, and may react violently to these emotions.

Teething:

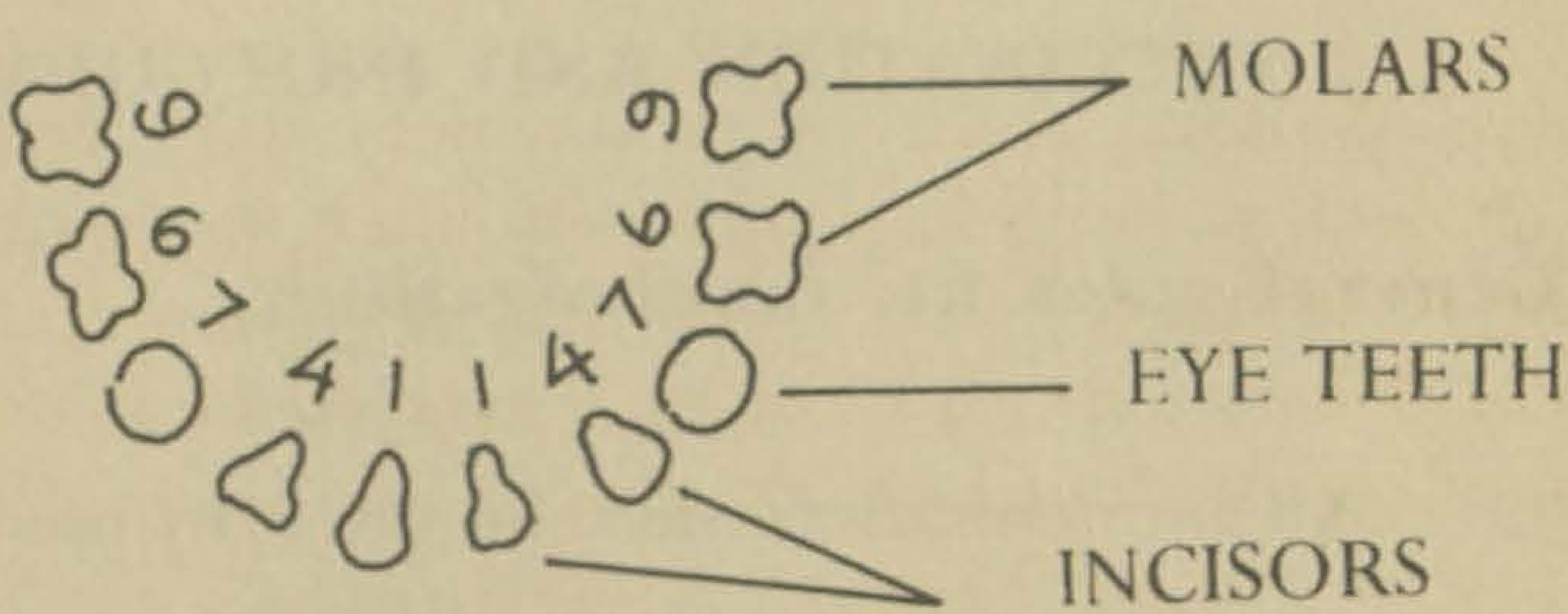
The average baby begins to get his teeth between six to eight months. Given a proper supply of milk exercise and fresh air, the teeth will certainly grow. During the emer-

gance of the teeth, the baby usually becomes cranky. There may be diarrhoea and vomiting and you must consult a child specialist.

UPPER JAW



LOWER JAW



Months:

6-8............ Lower two centre appear. (1 to 1.)

8-10........... Upper two centre incissors appear. (Nos: 2, 3, 3 and 3.)

12-15..........	both upper and lower jaw. (Nos: 4, 4, 5, 5, 6 and 6.)
18-24..........	both upper and lower jaw. (Nos: 7, 7, 8 and 8.)
20-30..........	lower and upper jaw. (Nos: 9, 9, 10 and 10)

Names of the teeth are marked according to the numbers given in the diagram.

Nos: 1, 2, 3 and 4. Incisor teeth.

Nos: 7 and 8. Eye teeth.

Nos: 5, 6, 9 and 10. Molar teeth.

VACCINATION AND INOCCULATION

General rules for immunization:

1. All immunization must be given by medical personnel.

2. Many immunizations involve the use of live vaccines, and therefore in spite of all care, they carry a risk of some untoward reactions.

3. It is important that the baby must be in perfect health. Special care is exercised in small-pox vaccination. If there is skin infection, or infantile eczema, small pox vaccination is not given.

Immunization recommendation for infants and children in Pakistan.

Inocculation	Age	Injection
B.C.G. Tuberculosis	First week of life.	One Dose.
Small-pox.	Two months booster, every three years or during an epidemic.	First Dose.
D.P.T. (Diphtheria, Whooping cough & Tetanus.)	3 months. 4 months. 5 months. 2 year booster 5 year booster	1st dose. 2nd dose. 3rd dose. 4th dose. 5th dose.
Polio.	3 months. 4 months. 5 months.	1st dose. 2nd dose. 3rd dose.
Cholera.	6 months. Every 6 months booster	1st dose.
T.A.B. (Typhoid.)	1 year. Every two years booster	1st dose.

Weaning:

This is an unpleasant moment for the child. Breast feeding as well as bottle feeding is reduced gradually. At the same time toilet training is instituted. The child is taught to imitate the mother, and it must receive verbal rewards such as, "Well! You are a nice boy!" and "Well done!" etc. A constant encouragement is absolutely essential for the further maturation of the mind and body.

Weaning time and methods vary from mother to mother. There are scientific ways, as well as various homespun methods. In any case solids must be started gradually, because the swallowing reflex of any solids and semi-solids is difficult to attain in the beginning. Occasionally, it seems like a messy affair, and the child brings out the food as soon as it is put in. Choking must be prevented at all costs. The age of weaning, from breast and bottle, depends on an individual. The most common method is to start one feed of Farex, or paste of milk and biscuit, and the other feed of milk. Milk however should not be stopped, whether it is fresh milk or powdered. It should not be substituted for other liquids such as fruit juices etc. A gradual process is of importance. I believe that a baby of three months of age, should be started on Farex and vegetable soups. By six months, banana paste with cream, egg yolk and meat soups may be fed without fear. However all this depends entirely on the physical health and the ability of the baby.

Psychological development of the Baby:

There are numerous theories with regard to this subject. For the sake of clarity, an attempt has been made to avoid confusion, and therefore only the very important and largely accepted facts are included.

Process of Maturation:

Every child progresses at his own individual rate. He cannot be forcibly taught until he is ready. In other words, a level of maturation must be reached between the body and the mind, before any kind of education is started.



A child should be given the freedom to fend for himself to develop independence.

A human baby does not develop proper co-ordination of the body and mind until he is one year old, when he is able to walk. It therefore seems unnecessary to enhance his natural capabilities before this period.

Growth Cycle:

Various parts of the human body develop at different rates. Growth follows a cycle. Some parts of the body develop earlier than the others. Ninety-five percent of the child's brain is developed by the age of eight months, while the rest of the body has reached only forty-five percent of its potential by this time. This growth pattern is natural.

Social Development:

Stress is laid on the harmony that should exist between the mother and the child. A poor relationship between them is the root cause of fear and anxiety in the child. The child may want to do everything in accordance with his mother's wishes, and thus dependency may result. Too many 'do's' and 'dont's' leave the child—a potential adult, in a negative state of mind. This will affect his further physical and mental growth.

Breast feeding psychology has its own role to play, but a bottle fed baby will be no different, as long as the mother's attitude is not thoughtless or negative.

The basic idea is the demonstration of love to the child. The child will understand love and protection. It is extremely important to pay equal attention to all the children. On arrival of another baby, the older child should be made to feel part of the event. (See photograph).



To eliminate the natural hostility of the older child for the new-born makes for better adjustment.

This represents the all-embracing beauty of togetherness, promotes a sense of belonging, and allays fears and anxieties. Natural hostility to the new child by the older child is eliminated, and a harmonious and balanced family results.

Permission to the children to visit Hospitals:

With due regards to the prevailing system of barring children under twelve years of age from the hospitals, my view differs in this rigid system. In the case of home deliveries all the family remains together, and the older child presents no danger to the newborn. In this regards hospitals may not be made into a dreadful place and I usually allow children to visit once a day to see their mothers and the newborn.

Upon the arrival of the newborn and the mother's absence from home, the older child becomes a real problem for the rest of the family. In fact the absence of the mother from home for seven odd days causes a peculiar feeling of anguish in the older child. It goes without saying that this gentle and compassionate method not only enhances the mother's recovery but is mentally healthy for the children as well, because the natural hostility towards the newborn disappears.

If the children are not allowed to visit hospitals, they become apprehensive, and the anxieties, suffered by them can be judged from my sister's case who delivered her second baby in a large hospital. I witnessed all the pangs as a medical student, the incident, is as follows.

The older child was two years old when the second baby arrived. My sister was miserable beyond words, worrying about the child at home. She cried at trivial matters and begged me to bring her child along the fence of the hospital so that she could have a glimpse of her girl. The child had

become sick and refused to eat anything. However, when the mother arrived at home the older child was found to be completely hysterical, her facial expressions were pathetic and unbearable. To make a long story short, she became hostile to the newborn. It was indeed a difficult task for the mother to readjust her to the new member of the family. The psychological trauma borne by the older child was extremely difficult to eradicate. After witnessing all those pathetic scenes, I vowed that if ever God gives me an opportunity to have my own hospital, I would allow the children to visit their mothers. After all the institutions do not fall because of the children in the hospitals, during visiting hours.

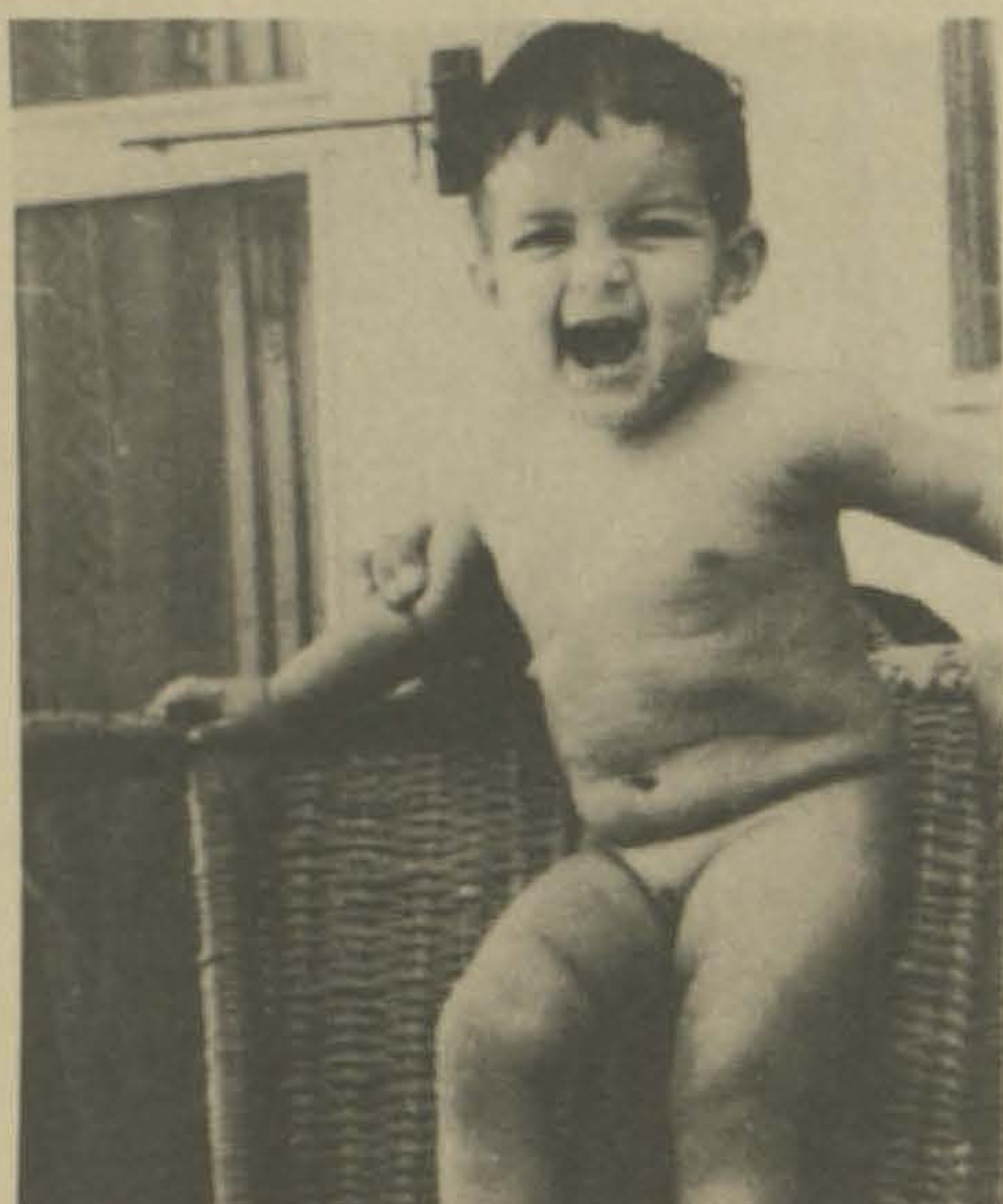
Social Environment:

A child brought up in a friendly and happy environment, will later become a successful and loving parent himself. A great deal depends on inherited intelligence, but a major role is also played by environmental factors. Besides parents, close relatives also help in guiding the child through life. It is my opinion that, social and environmental factors play a larger role in the subsequent psychological and physiological development. A friendly and loving environment will produce a normal healthy child, and a useful understanding individual.

A father's role is vital in the psychological development. He should not only be a bread winner, but also smile winner. Children with well-knit families make better citizens. The common quarrels of the parents, when held in front of the children cause nervousnees, fear and hostility, either towards the mother or the father. The child may use its own little mind, and begin to judge his parents in a fashion, which does not favour either the mother or the father. The child suffers from sleeplessness, nightmares, and loss of appetite, all of which effect his mental and physical capabilities. Never under-estimate a child, for he can sense everything.



Cuddling and display of affection are essential for the psychological upbringing of the child.



A child should be encouraged to be uninhibited with what is natural and normal.



Radiating confidence. A product of harmonious and loving family.

CHAPTER X

POST NATAL EXERCISES

As has already been mentioned in Chapter 3, the total weight gain during pregnancy is between 21 to 28 lbs. Of this, 12 pounds is the weight of the baby, the liquor amnii and the placenta. Thus the balance must be lost in the post-natal period, so that the initial weight of the woman is restored, and the lax muscles of the abdomen and perineal region regain their tone.

The exercises illustrated in this Chapter are very simple to perform, and effective if done regularily. They should be started on the second day after delivery, provided the delivery was uncomplicated.

I have found that although most women have a sincere inner urge to reduce, the essential will power is lacking. The usual trend of women of this part of the world is to put a tight cotton binder on the abdomen with the notion that the abdomen will not protrude. This is a 'hocus-pocus' idea of their mothers and mothers-in-law. This binder is not only useless but dangerous as well. It impedes proper breathing, and blood circulation becomes sluggish. This predisposes to clot formation in the blood vessels. I have no objection in the case of elastic corsets since they are expandable and proper ventilation of the lungs is not hampered. In fact, an elastic girdle gives a good support to the abdomen.

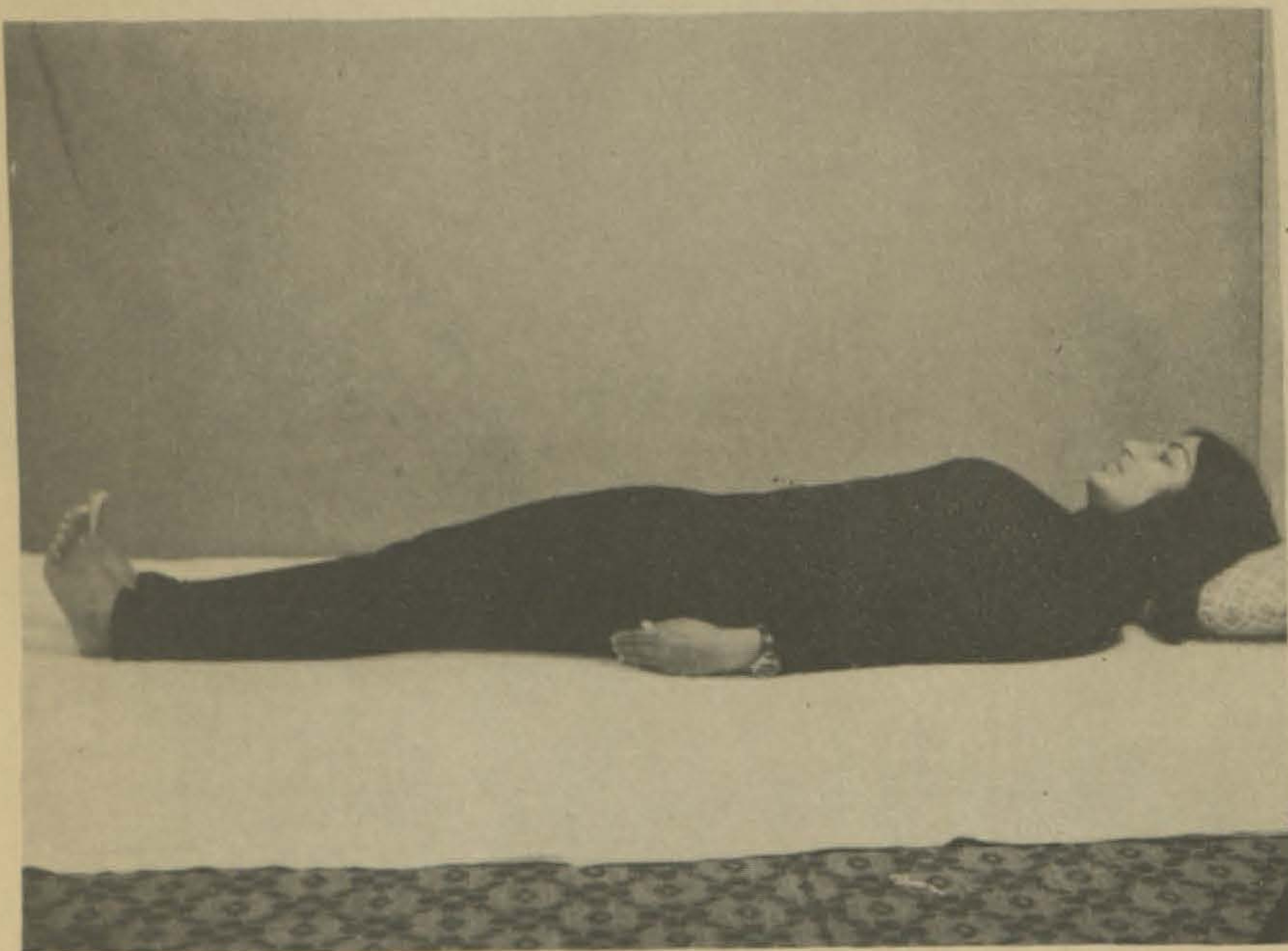
The following exercises should be practised according to the illustrations for six weeks after delivery.



Second day of delivery.

Exercise No. 1.

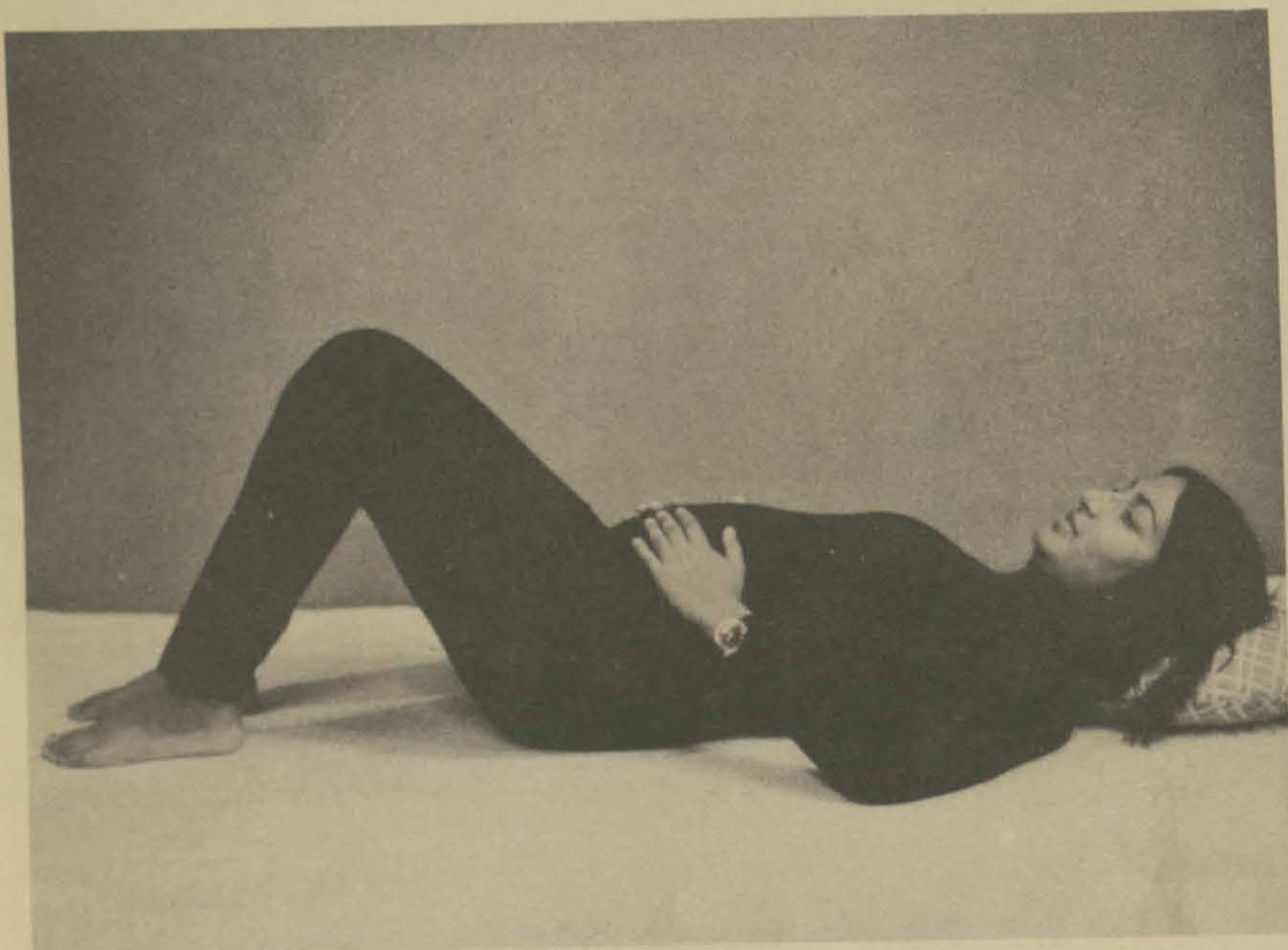
Lying on back, with knees bent and feet resting on bed. Place hands on either side of chest at level of lower edge of ribs. Breath in and out slowly expanding chest sideways. (4 times)



Exercise No. 2. Feet and Legs.
Lying on back with knees straight. (a) Bend and stretch ankles 4 times. (b) Roll feet round in circles (4 times). (c) Press knees flat onto bed, then relax (4 times).



Exercise No. 3, part a.
Breathing (Abdominal) Lying on back with knees bent and hands on upper part of abdomen. Breath in allowing abdomen to rise.



Exercise No. 3, part b.
Breath out, allowing abdomen to sink. (4 times)

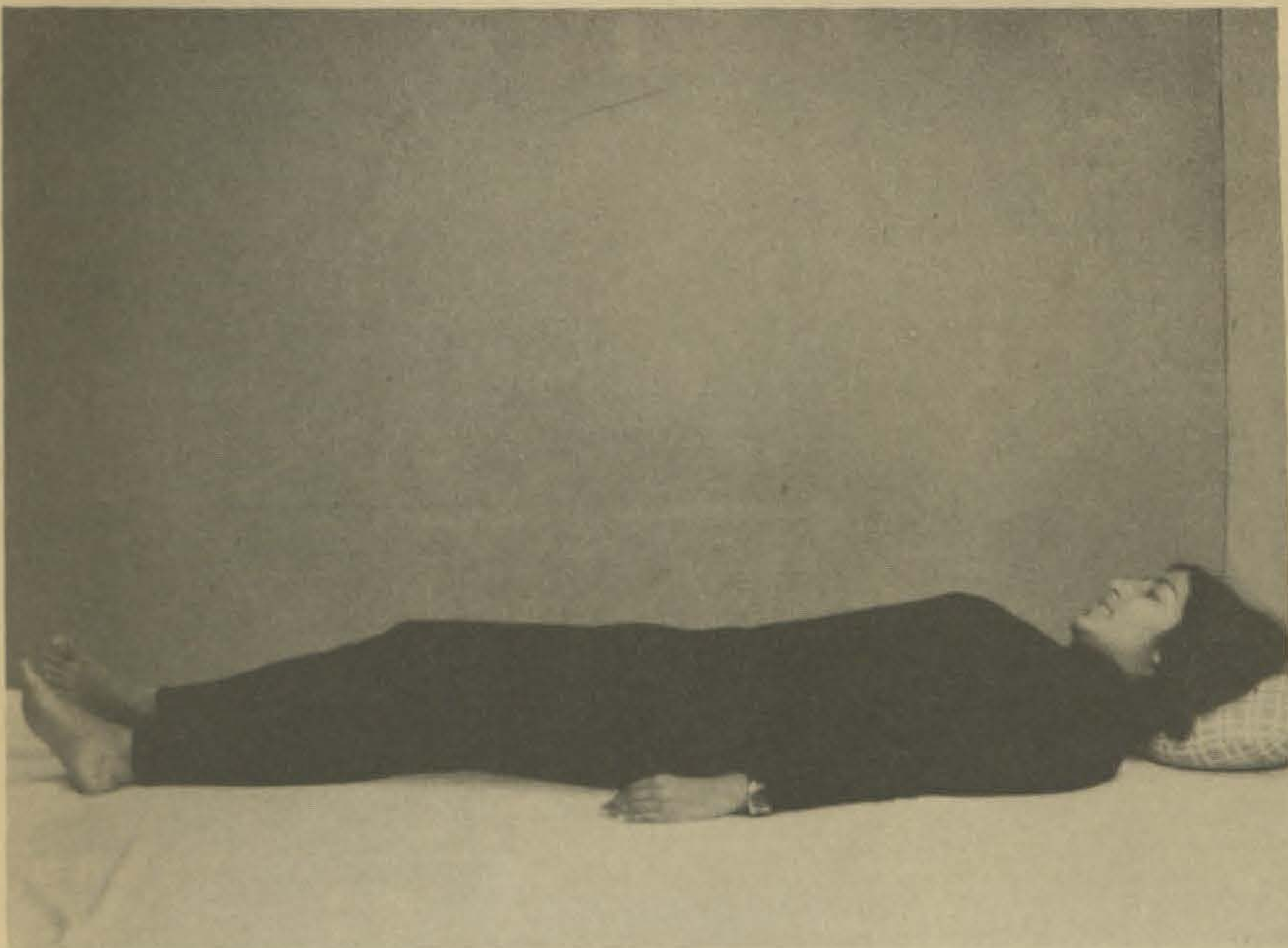


Third day.

Add second day exercises also. In sequence.

Exercise No. 4. Abdominal Exercise.

Lying on back. Knees bent, hands resting on lower abdomen. (a) Draw lower abdominal muscles inwards and upwards, making them as hard as possible. (b) Relax slowly. (4 times)



Fourth day.

Add all previous exercises as well.

Exercise No. 5. Pelvic Floor Contraction.

Lying on back, knees straight, feet crossed at ankles. (a) Tighten buttocks and press thighs together. Then draw in the back passage and vagina as if trying to prevent bowel action and urination. (b) Relax all muscles slowly.



Exercise No. 6, part a. Pelvic Rocking.
Lying on back, knees bent. (a) Draw in lower abdominal muscles at the same time tighten buttocks so that small of the back touches the bed.



Exercise No. 6, part b.
Relax all abdominal muscles, buttocks and pelvic floor muscles slowly. (4 times)



Fifth day.

Exercise No. 7. Abdominal.

Lying flat, legs straight; put the hands under the buttocks. Keep abdominal muscles drawn in throughout. (4 times)



Seventh day.

Exercise No. 8. Abdominal Rotation.

Lying with knees bent, raise head, keeping chin pulled in, and lift left hand to touch outside of right knee. Return slowly to lying position. Then repeat in opposite direction. Keep abdominal muscles drawn in throughout exercise. (3 times either side).



Eighth day.

Exercise No. 9. Abdominal.

Lying with knees bent, raise head slowly from the pillow. Support abdomen on either side with hands. Draw in abdominal muscles. Relax slowly (4 times)



Ninth day.

Exercise No. 10. Back.

Sitting on a chair with straight back, feet slightly apart and bend forward to touch toes. Slowly come to the upright position. (3 times). *See photograph No. 10b on following page.*





Exercise No. 11a. Wrong Posture.
The woman is standing with sagging abdomen, legs half bent, and hunch in the back. (Wrong posture).



Exercise No. 11b. Correct Posture.
The knees are straight, abdominal muscles are drawn in, and shoulders are braced back.

N.B.—*Exercises from 4 to 11 should be continued for six weeks after delivery.*

CHAPTER XI

FAMILY PLANNING

Time is changing fast, and Human Beings are trying to keep pace with it. It is generally agreed that women endure the anxieties, hazards and hardships of childbirth. Therefore the choice of contraceptive techniques should be more suitable from the point of view of the wife than of the husband. Woman has been subdued since the dawn of history. She has been the victim of drudgery, household chores, and has also been likened to a 'child making machine'. The rate of productivity must be decreased so that it can give women some rest. With the abortion law prevalent in the countries of the west, it is the women who undergo the perils of operative procedures which are not entirely safe yet.

During the last fifty years, scientific advances have been tremendous. Medical science too, has made rapid progress. The main focus of attention in this field has been on preventive measures. The infant mortality rate has been greatly reduced. Maternal mortality (death during child birth) is almost negligible. With the advent and discovery of cures for almost every disease, the life expectancy of each individual has increased.

Hence, in order to keep a balance of productivity of food and amenities, the reproduction of humans must be reduced, for the natural resources of the planet Earth are not unlimited. For this reason, I wish to convey the message to married couples, that there is an urgent need to pause and

think. An ideal family dwells in each home with children who are both mentally and physically fit. These children are potential parents themselves. It is the responsibility of both the husband and wife to limit their family, especially in over-populated developing countries.

Family planning is a blessing. Millions of rupees are being sent by the government in this venture and every couple must benefit from it.

A woman undergoes possible hazards of repeated pregnancies. This drains her energy, making her both mentally and physically fatigued and chronically ill. The best of attention that her children need, as their birth right is therefore denied. The situation is indeed sad. It goes without saying that the poorer the family, the more children they have, and the poorer they get. Their offspring cannot be educated, and as a result become burden on society. It is, therefore, the moral duty of each individual to disseminate the knowledge of 'planned parenthood' to make a strong and useful nation.

Methods of Family Planning:

There are many methods of contraception discussed in this Chapter, and each couple can pick and choose according to their mutual consent. They should also discuss this with their respective doctors so that proper advice is sought to make planned parenthood safe. These methods are discussed according to their merits:

CONTRACEPTIVE METHODS FOR WOMEN

Oral contraceptives:

These are most widely used and easily available. There are numerous patent names and one cannot keep up with the

large numbers circulating in the market. Some of them are better than the other, and your own doctor will undoubtedly prescribe the one that is in her opinion, the least harmful.

How they function:

All oral contraceptives have one objective. The 'pill' as it is commonly called, functions by virtue of stopping the production of eggs in the ovaries. The menstrual flow, however, remains regular every month.

General consideration of taking the Pill:

Many women ask various questions, with regards to the effects of the pill before they are prescribed by the doctor. They have a right to know every pros and cons of taking this drug. Most of the doctors do the explaining, but those who are too busy to do so cannot be blamed for their heavy appointments. For this reason alone, I feel it is necessary to explain briefly merits and demerits of the pills. They are described as below:

Embolic Phenomenon (Clot formation):

This condition is much publicised in the lay papers with the result that the patients get frightened out of their wits. In my opinion this is neither fair for the patients nor for the attending doctor, for the condition is not as bad as it sounds. Embolic conditions means a clot formation in the blood vessels sometimes causing fatal accidents. My dear readers please do not be afraid of this statement because according to the statistics, death from the childbirth, and complication of pregnancy are ten times more, than taking of the pills. Therefore, I regard taking of the pill as a contraceptive much safer than the state of pregnancy and childbirth.

Menstruation :

The value of the pill in regulating the menstrual cycle is well, known. The pill, therefore has a double action. It regulates the periods and also prevents pregnancy. In the case of heavy periods, the flow of the blood is restored within the normal range preventing the onset of anaemia.

Skin Changes:

The common notion of the patients is that the pill aggravates the pimples and acne. This is a wrong idea and must be dispelled. In fact the researchers have found that the complexion of the woman who is on the pill becomes clearer, and the pimples do not crop out.

Breast Changes:

There is no doubt that some women do have a feeling of heaviness in the breasts while they are on the pill . This may well be due to a particular brand of the drug. In that case the women can try other type of contraceptive pills, the one with the minimum effective dosage. It has been suggested that some types of cancer of the breasts are much less in those women who are on the pill, as compared with those who are not on the pill.

Effects on the baby:

When a woman stops the pill and then conceives, there are no harmfull effects on the growth of the baby. The chance of producing an abnormal child is no more than in those who are not on the pill.

Precautions:

If a woman has high blood pressure, history of coronary, a clot in the blood vessels of the limbs, or a bleeding disorder,

the physician naturally hesitates in giving these drugs because of complications which may arise by taking the pill.

Excessive weight gain, nausea and headache are reported by some women. These symptoms disappear in due course, but your doctor can give tablets to counteract the ill-effects of the 'pill'. On no account should the women start and stop the pill on their own will, for irregular bleeding may occur.

I make it a point that every woman who is on the pill, should have her blood pressure and weight checked every one or two months throughout the period that she is on the pill. This gives the doctor an idea about how she is tolerating this drug which is usually not taken for more than two to three years at a stretch.

Parenteral Injections:

Intra-muscular injections of Depot Provera 250 mg. are given once every three months. During this period, the egg is not liberated. However, it has been reported in medical literature, that in a number of cases, irregular bleeding occurs or no bleeding occurs throughout the 3 months. This causes anxiety in some women, but others prefer this treatment inspite of the above-mentioned after-effects of the injection. I leave this topic on the choice of each patient and her doctor, but I do not personally find them suitable.

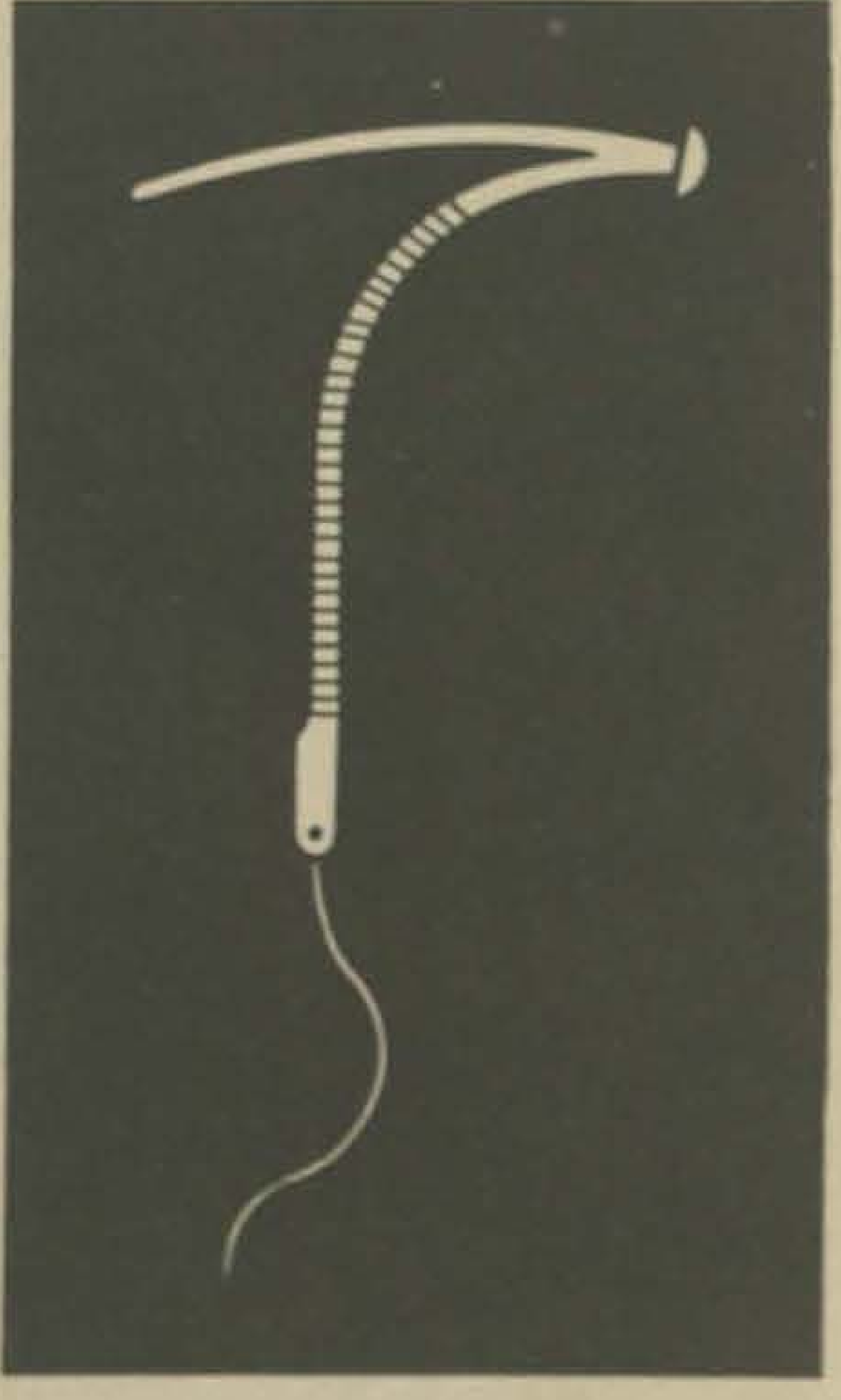
Mechanical Contraception:

It is interesting to note that the first mechanical contraceptive was devised in the Arabian countries. This valuable method had become essential for them, because the population of camels was becoming overwhelming. They used to put stones in the vaginal canal of the she-camels in order to make a mechanical obstruction for the male camel's sperm cells. This is a historical fact, and I have a great admiration for their ingenious method to control the over-population of camels.

In the range of human contraceptives, the most common device is the 'intra-uterine coil' the presence of which inside the cavity of the womb prevents the anchoring of the fertilized ovum.

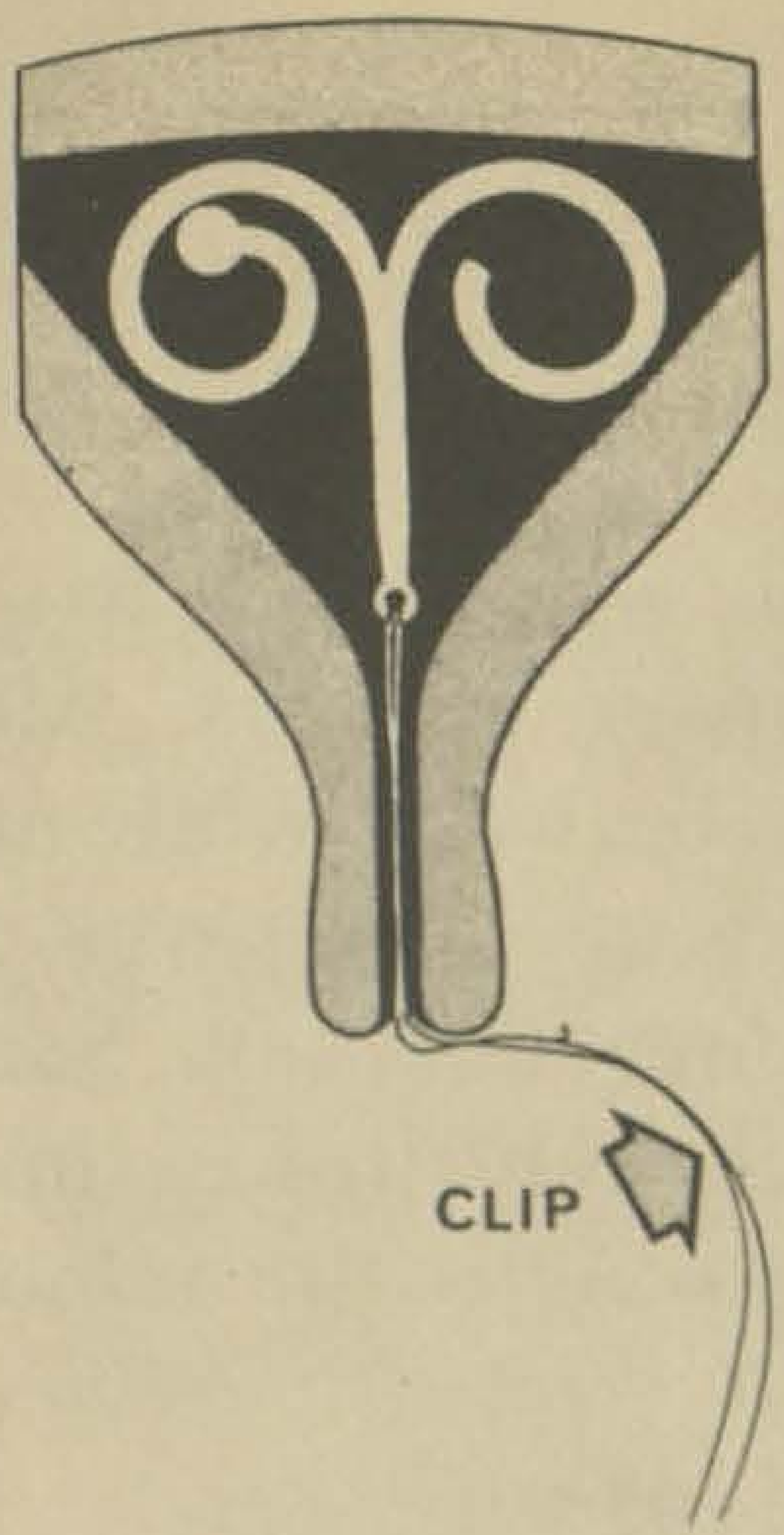
There are many types available, and these are inserted by expert doctors and/or those specially trained for this purpose in Family Planning Clinics. It is not essential for the patient to know how it is inserted. It is sufficient to say that the procedure is painless, takes only a few minutes and can be left inside the womb for an indefinite period of time. If the patient has irregular bleeding, signs of infection, or experiences discomfort, the coil can be taken out painlessly.

INTRA-UTERINE DEVICES

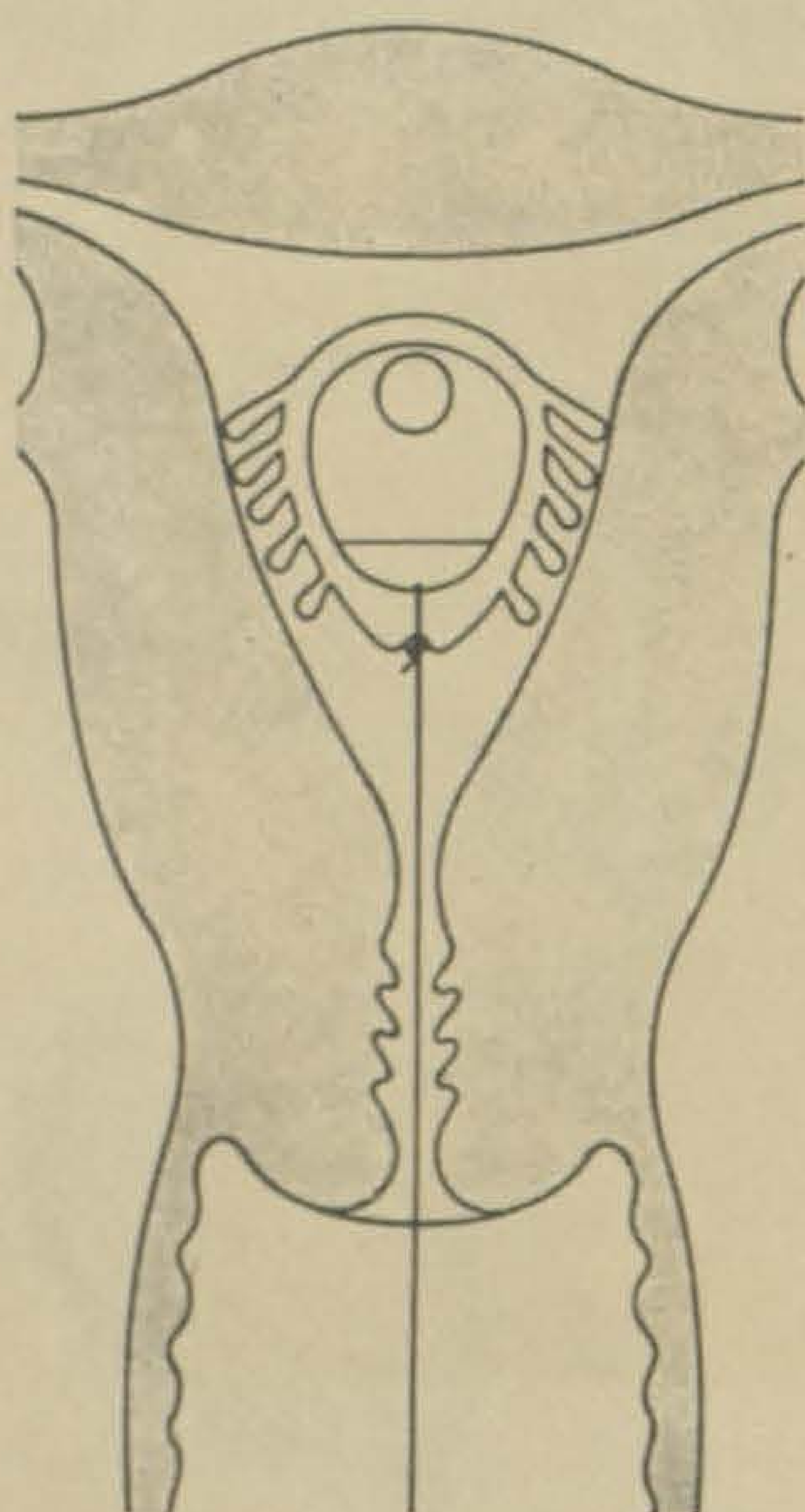


GRAVIGARD Actual Size.

Actual size of copper contraceptive (Gravigard).
Active for two years, rarely expells, and easily removed by the doctor.



SAF-T-Shield.



Dalkon Shield.

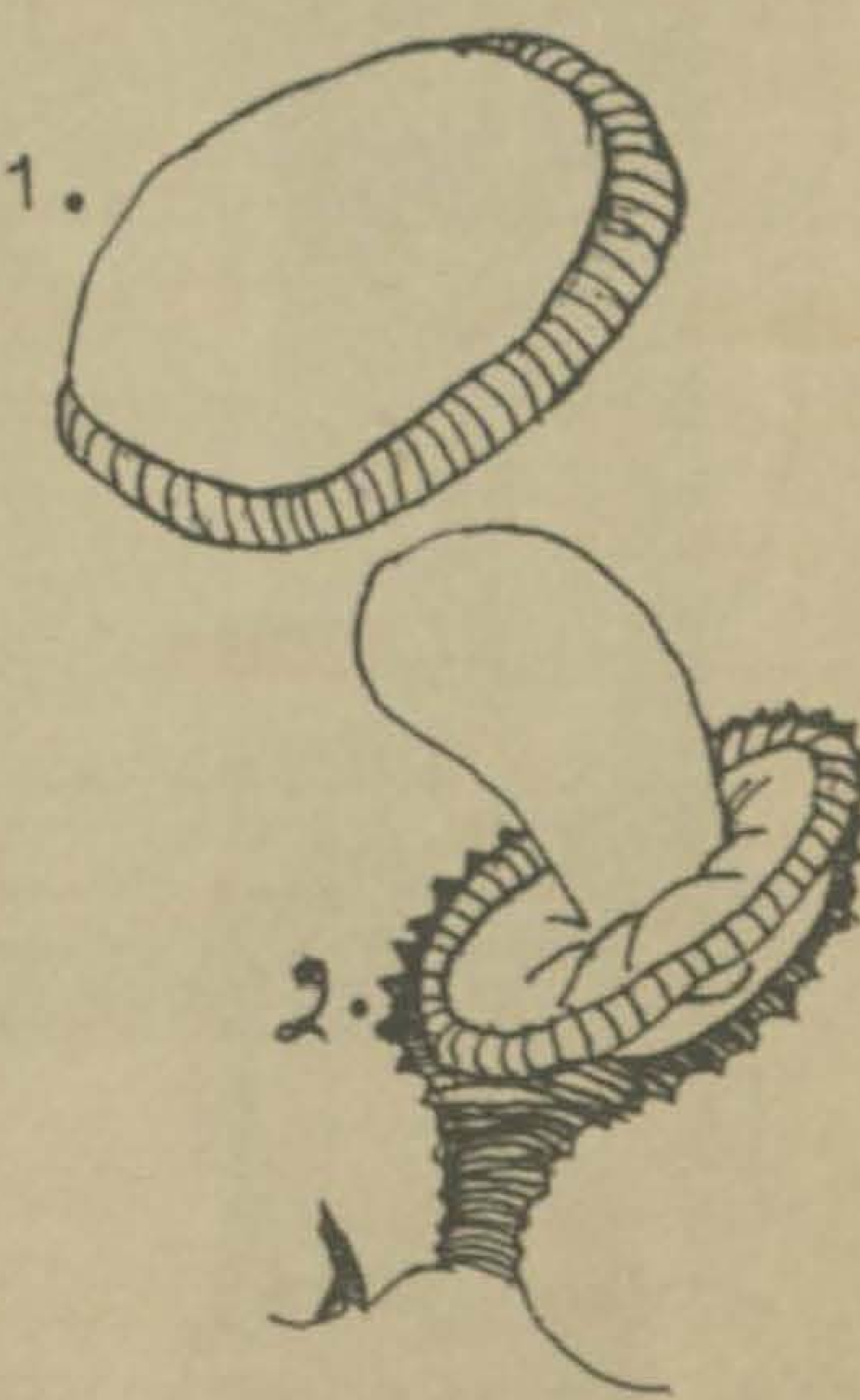
It has the lowest expulsion rate. Highly sophisticated, and certainly better than the older generation of I.U.C.Ds.

With the insertion of the coils, there is sometimes vaginal spotting for a day or two. Sometimes the menstrual flow is heavy and prolonged. This results in the necessity of removing it in 7 to 15 percent of the cases. Heavy bleeding may occur in 50% of the cases. To counteract these disadvantages, there is a wonderful drug called Epsikapron (Aminocaproic Acid) made by Kabi. Although not available in our country, it would be worthwhile making its availability accessible. These tablets are, however, contra indicated in renal insufficiency (kidney disease). Sometimes with these tablets, gastro-intestinal disturbances may occur, but their value on the whole outweighs the minor disadvantages.

Diaphragm (dutch cap):

This is made of rubber and it is inserted by the patient herself any time before intercourse. It is available in various sizes. It is the doctor who ascertains the size and teaches the procedure of introducing it. Along with the diaphragm,

DUTCH
CAP



Contraception by Vaginal Diaphragm or Dutch Cap.
1. The cap itself. 2. The cap in correct position.

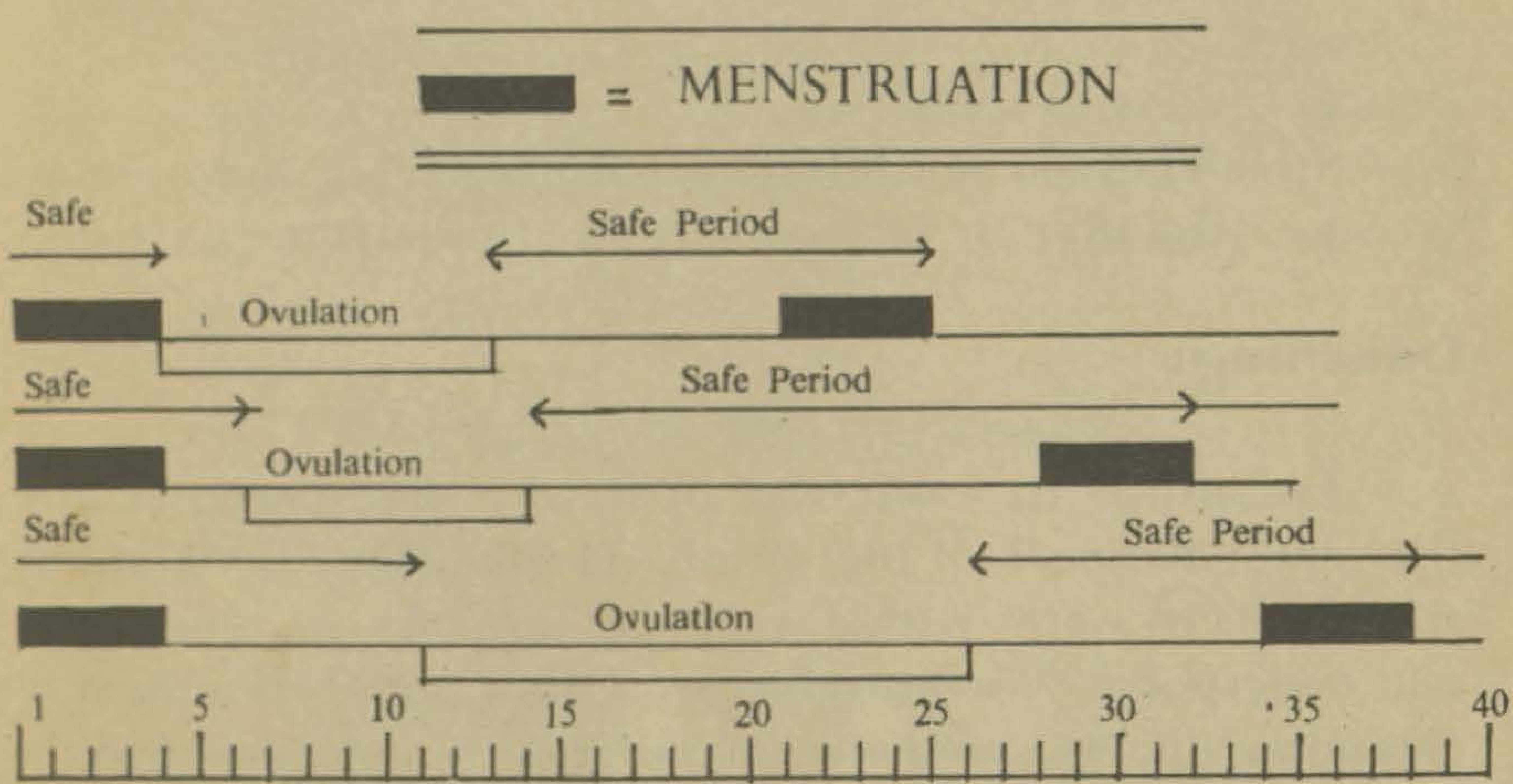
certain contraceptive creams such as Preceptin reduce the further risk of conception. The diaphragm fits in front of the neck of the womb and is removed 8 to 12 hours after intercourse. It is then washed properly and kept for re-use. The pregnancy rate is 6 to 12 per 100 women—years. It is a safe method for intelligent women, and does not interfere with natural coitus or orgasm of either partner.

MISCELLANEOUS METHODS

Safe period or Rhythm Method:

This is essentially dependent on the fact that intercourse takes place before or after ovulation time. The wife must keep a body temperature chart to begin with, so that the exact period of the liberation of the egg is ascertained. See the following diagrams for safe periods for a 21 day, 28 days, and 35 day cycle.

FERTILE AND SAFE PERIODS



In case of an irregular period, this method is of little value, because of erratic ovulation. Inspite of its simplicity,

it is not ideal in itself, for the act of coitus depends greatly on the mood of the couple.

The safe period is usually regarded as 9 days before and 4 days after menstruation, during which conception does not take place. However, with this method, the failure rate is 6 per 100 women—years.

Chemical Contraceptives:

This includes contraceptive jelly, cream or foam tablets. These are not very safe when they are used alone. Pregnancy rate is 20 to 40 per 100 women—years. Many women may also be allergic to these contraceptives. A number of varieties are available. The cream or foam tablets are spermicidal (they kill the sperms in the vagina). These are inserted into the vagina a few minutes before intercourse.

The main use of chemical contraceptive is when it is used along with other mechanical appliances. The advantages of chemical contractives are:

1. Easy to apply.
2. They do not interfere with coital act and orgasm.
3. Facilitates intercourse by lubrication.

Douching:

The aim is to wash away or destroy the sperms before they enter the neck of the womb. The fluids used commonly are 2 pints of water with a weak solution of soap, along with one tablespoon of white vinegar. Other antiseptics such as cetavalon one teaspoon in one pint of water may also be used. Right after the intercourse, the woman sits on the water closet and flushes the vagina from a douche can with the douche nozzle inserted in the vagina.

The pregnancy rate is estimated at 30 to 40 per 100 women—years. The only advantage of douching is in an emergency, when other method fails or when a condom tears during intercourse.

CONTRACEPTIVE DEVICES FOR MEN

Rubber Sheath

These include rubber sheaths or condoms. These are the most widely used, and are handy and easy to operate. However, there is a chance that the condom may tear during intercourse and semen may be released into the vagina. Occasionally the sheath may have a puncture. It is a good practice to blow the sheath before using it in order to rule out perforation. Innumerable varieties are available in the market. The gratification obtained by the woman is not complete in some cases.

Contraceptive Injections for Men:

In recent months, an injection that stops spermatogenises (the formation of sperms) and which is taken once a week is under trial in Germany. This method would be ideal once it is introduced in every country. However, I cannot embark on its merits at this stage.

OPERATIVE PROCEDURES

Female Sterilization:

This is mentioned because of the urgency to limit population for the economic interest of a particular country. I have, therefore, discussed briefly the operative procedures which are permanent. For female sterilization, the fallopian tubes are occluded, either by cauterisation (laparoscopy)

from the abdomen, or by ligation either from the abdominal or vaginal route. There is a common notion that obesity results from these procedures. I can assure the patients that the only reason for obesity is compulsive over-eating. This may be caused by certain psychological impacts on her mind.

However, semi-permanent methods are also present. In this case, the husband and wife can have another baby after an interval of four to five years after the operation. This can be done by restoring the patency of the tubes.

Male Sterilization:

This is a very simple procedure and is performed under local anaesthesia. The tubes that carry the male sex cells are ligated and cut. This is called vasectomy. It must be stressed here, that it is far simpler an operation than the one performed for women. It should be mentioned that many wrong notions are harboured in the minds of couples regarding impotency as a result of this operation. There is no cause for impotency unless the patient is effected psychologically by the operation. If it does perchance, a reassurance by the doctor is all that is needed.

To conclude, it is imperative to say that every individual should take up the responsibility of limiting the population. This should be done not only for their own sake, but for the benefit of the whole community.

GLOSSARY OF OBSTETRICAL TERMS

ABDOMEN: The portion of the body which lies between the ribs and the hips.

ABERRATION: Abnormalities.

ACUPUNCTURE: The ancient Chinese science of treatment with needles.

ACID: Sharp, sour.

ALKALI: Opposite to Acid.

ANDROSPERM: Sperms carrying 'Y' or Male genetic code.

ANTENATAL: The period of Pregnancy.

ANUS: The opening of the Elementary Canal by which undigested material is expelled.

BAG OF WATER: The membranes containing the Liquor Amonii or Amniotic Fluid.

BREECH DELIVERY: Delivery when the bottom of the baby is presenting first.

BRONCHITIS: Inflammation of the lining of the bronchal tubes which are part of the lungs.

CERVICAL DILATION: The stretching of the opening of the cervix as the foetus descends during labour.

CERVIX: The lower and narrow end of the uterus.

COITUS: Intercourse.

COLOSTRUM: Yellow, thick secretion from the breasts for the first two days after delivery.

CONGENITAL: Existing at, and usually before, birth; referring to conditions present at birth.

CONCEPTION: The fertilization by the union of male and female sex cells.

CONCEPTUS: The product of conception.

CONJUNCTIVA: The white section of the eye.

CONTRACTION: In connection with the uterus, implies shortening of the muscle and/or development of tension.

CORD: (See Umbilical Cord).

DELIVERY: Expulsion or extraction of the child at birth.

DIABETES MELLITUS: The presence of excessive sugar in

the blood.

DIAGNOSIS: To research and confirm a disease as shown by certain symptoms.

DILATION: The action of dilating or stretching.

ENGORGMENT: Conjestion or excessive filling.

FOETUS: The developing young in the human uterus after the end of the second month. Before eight weeks it is called the embryo; it becomes an infant when it comes outside the body of the mother.

FULL TERM: Culmination of pregnancy at the end of nine months. 40 weeks.

FUNDUS: The part of the uterus above the orifices of the uterine tubes.

GESTATION: The period of development of the womb from the time of fertilization of the ovum.

GONADS: The organs of the female and male (ovaries and testes respectively) which produce the egg and sperms.

HABITUAL: Repeated process.

HEREDITARY: The transmission of characteristics through X and Y sperms from the parent to the offspring.

HYPERTENSION: Especially high blood pressure.

HYPOTENSION: Lowered blood pressure.

INFECTION: Presence of harmful germs.

INTRAUTERINE: Within the uterus.

IRREGULARITY: The momentary change in time interval.

LABOUR: The process of expelling the foetus from the uterus through the vagina to the outside world.

LABOUR, SECOND STAGE OF: The stage of expulsion, begins with complete dilation of the cervix and ends with the birth o the baby.

LATENT PHASE OF LABOUR: The early part of the first where the cervix first begins to dilate up to approximately 1½ cm. This portion of labour usually progresses slowly.

LIQUOR AMNII: The fluid in the bag of water in whic the foetus is bathed.

MATERNAL: Pertaining to the mother.

MECONIUM: A dark greenish material in the intestine of the full term foetus.

MEMBRANES: A thin layer of tissue which covers a space or divides a space or organ. In Foetal Monitoring, the amnion and chorion which surround the foetus are membranes.

MORTALITY: Death or Death Rate. Perinatal Mortality; the death rate of infants about the time of birth, often includes stillbirths and deaths in the first week of life.

MULTIFAROUS: Having had two or more pregnancies which resulted in viable offspring.

NICOTIN: Chemical found in cigarettes which is harmful to both the mother and the foetus.

OBSTETRICS: The branch of surgery dealing with pregnancy and labour.

OBESE: Excessively fat.

ORTHOPHOSPHATES: Phosphates and other salts which are deposited on the teeth.

OXYGEN SATURATION: The percentage of haemoglobin which is in chemical combination with oxygen.

OVULATION: Liberation of the egg from the ovary.

PELVIC CAVITY: Bony cage where the internal genital organs are housed. (See Uterus).

PERINIUM: A region between the vagina and anus.

PHYSIOLOGY: Normal functions of the body.

POSTPARTUM: Occurring after childbirth.

PREMATURE: An infant that weighs 2500 grams (about 5.5 lbs.) or less at birth or born before the proper time, i.e., underdeveloped infant.

PREGNANCY: A condition of having a developing embryo or foetus in the body.

"PRESENTING PART": That part of the foetal anatomy which is felt upon vaginal examination.

PRIMIGRAVIDA: A woman pregnant for the first time. Sometimes expressed as Grivida 1.

PSYCHOLOGY: Function of psyche (function of the mind).
RENAL DISEASE: A disease of the kidneys.
RH FACTOR: Rhesus factor present in the blood.
RUBELLA: German measles. Different from ordinary measles.
SEDATION: Inducing a calm, relaxed, easy state of mind by the use of drugs or chemical agents.
SMALL OF THE BACK: Sacro-Iliac region.
SPECULUM: An instrument to see interior of the vagina.
SUPINE POSITION: Lying on the back with face upwards.
TOXAEMIA: The toxemias of pregnancy are maternal disorders encountered during gestation or early after delivery. They are characterized by one or more of the following signs; Hypertension, œdema, albuminuria, and in severe cases, convulsions and coma.
TRANQUILIZER: An agent which acts on the emotional state, quieting or calming the patient without effecting clarity of consciousness.
TRICHOMONAS: Infective germs responsible for a kind of a vaginal discharge.
UMBILICAL CORD: The cord connecting the placenta with the fœtus. At the close of gestation made up of two arteries and a vein encased in a mass of gelatinous tissue.
UTERINE CONTRACTIONS: A shortening and pressing force exerted by the uterus during the expulsion of the foetus to the outside world.
UTERUS: The hollow muscular organ in female animals in which the embryo and foetus receive nourishment and grow.
VAGINA: The canal in the female extending from the vulva to the cervix of the uterus.
VALIUM: Diazepam—a tranquilizer used in conjunction with meperidine to produce analgesia and sedation.
VERNIX: A greasy or oily substance which covers the skin of the foetus.
VULVA: External genital organs including clitoris, urethra

and vagina.

WEANING: To accustom to nourishment other than the mother's milk.

X-Ray: Radiographs taken by passing X-Rays through the body. X-Rays can penetrate opaque matter and so reveal the internal conditions of the body.